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Supreme Court of the United States

OCTOBER TERM, A. D. 1922.

STATE OF WISCONSIN,
Complainant,
vs.
STATE OF ILLINOIS and THE SANITARY DISTRICT OF CHICAGO,
Defendants.

No. 23. Original.
In Equity.

JOINT AND SEVERAL ANSWER OF DEFENDANTS, THE STATE OF ILLINOIS, AND THE SANITARY DISTRICT OF CHICAGO TO THE BILL OF COMPLAINT FILED HEREIN

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HAWKINS & LOOMIS CO., LAW PRINTERS, CHICAGO.

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IN THE

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, A. D. 1922.

STATE OF WISCONSIN, *Complainant,* vs. STATE OF ILLINOIS and THE SANITARY DISTRICT OF CHICAGO, *Defendants.*	No. 23. Original. In Equity.

JOINT AND SEVERAL ANSWER OF DEFENDANTS, THE STATE OF ILLINOIS, AND THE SANITARY DISTRICT OF CHICAGO TO THE BILL OF COMPLAINT FILED HEREIN.

These defendants, the State of Illinois by Edward J. Brundage, Attorney General of Illinois, its solicitor, and The Sanitary District of Chicago by William F. Mulvihill, Attorney, The Sanitary District of Chicago, its solicitor, and by Clyde L. Day, Morton S. Cressy and Edmund D. Adcock, solicitors for said defendants, and each of them, reserving to themselves all right of exception to said bill of complaint for answer thereunto jointly and severally allege, aver and say as follows:

1. These defendants admit that the State of Wisconsin is one of the states of the United States of America, and that this action is brought pursuant to resolutions adopted severally by the two houses of the Legislature of said state at the regular session thereof held in the year 1921.

2. These defendants admit that the State of Illinois is one of the states of the United States of America, and the defendant, The Sanitary District of Chicago, is a public corporation organized and existing under and by virtue of the laws of said State of Illinois and is a citizen thereof.

3. These defendants and each of them deny that this court has jurisdiction thereof, and that there is a controversy set forth in the bill of complaint between two states of the United States and between a state of the United States and a citizen of another state. On the contrary, these defendants and each of them aver and charge that no controversy is set forth in the bill of complaint herein between two states of the United States and between a state of the United States and a citizen of another state; that the matters and things alleged and set forth in the bill of complaint upon which the said complainant seeks to base a cause of action relate and pertain to those matters and things over which the United States of America has exclusive jurisdiction, with which matters and things the State of Wisconsin is not concerned,—that is to say,—the harbors located along the shores of Lake Michigan and Lake Superior in Wisconsin mentioned in the said bill of complaint are part and parcel of the Great Lakes system, and they and each of them are navigable waters of the United States over which the United States has jurisdiction under Article 1, Section 8, Clause Third of the Constitution of the United States wherein Congress is given power to

> "regulate commerce with foreign nations and among the several states and with the Indian tribes";

and the United States has taken jursidiction of each and every of said harbors by appropriating money for the improvement of each of them and by making improvements therein pursuant to various and sundry Acts of

Congress passed during the period of upwards of eighty years last past; that the said supposed interference with navigation upon the said harbors and each of them alleged in said bill of complaint by the alleged acts and doings of the said defendants, or one of them, can be complained of, if at all, only by the United States of America. For the reasons in this paragraph stated these defendants and each of them do here and now move that the bill of complaint be dismissed for want of equity.

4. These defendants admit that along the shores of Lake Michigan in Wisconsin there are approximately 350 miles of shore line and that along said shore line there are approximately 13 harbors with facilities for the loading and unloading of vessels navigating the said Lake Michigan and the other Great Lakes. In this connection these defendants aver that the facilities for the loading and unloading of vessels in certain of said harbors are meagre and of little consequence and the commerce carried on through certain of said harbors is small and in some instances does not extend beyond the immediate vicinity of the harbor. These defendants admit that harbors known as Milwaukee, Manitowoc, Green Bay, Sheboygan, Marinette, Racine, Kenosha, Port Washington, Kewaunee, Algoma and Sturgeon Bay are located on said shore line. These defendants are not informed as to the total amount of freight received at and shipped from the said harbors during the year 1920 exclusive of freight received and shipped by car ferry, and, therefore, ask strict proof as to the amount of such tonnage during said year 1920, or any other year or years that may be designated. These defendants and each of them aver that the principal freight received at and shipped from certain of said harbors is freight received and shipped by car ferry; that very little tonnage comparatively is received and shipped from said

harbors in any other way than by car ferry; that the car ferry is a craft or boat which draws a very small amount of water and the draft thereof is small and the depth of water in each and every of said harbors is by several feet more than necessary to permit said car ferries to enter and leave them and each of them.

5. These defendants admit that the shore line along Lake Michigan in the State of Illinois is approximately 60 miles in length, and that said shore line comprises the eastern boundary of Cook and Lake Counties in the said state.

These defendants and each of them deny the allegation of said bill of complaint to the effect that up to the year 1900 the Chicago river emptied its waters into Lake Michigan at a point in the City of Chicago. These defendants admit, however, that prior to the time or times hereinafter mentioned, long prior to said year 1900, the said Chicago river flowed through said Lake and Cook Counties, one branch in a northerly direction, and the other in a southerly direction, and emptied into Lake Michigan at a point in the City of Chicago.

These defendants and each of them further aver as follows:

The Continental Divide separating the water-shed of the St. Lawrence river basin and the water-shed of the Mississippi river basin passes within approximately eight miles of the shore line of Lake Michigan at Chicago. Said Continental Divide at the point mentioned is insignificant and its summit is but a few feet above the mean surface elevation of Lake Michigan. Originally, in a state of nature, the west fork of the south branch of the Chicago river emptied into the south branch of said Chicago river. Said south branch in confluence with the north branch formed the Chicago river. The west fork

of the south branch passed within a short distance of the DesPlaines river, which in confluence with the Kankakee river forms the Illinois river which flows through a large and fertile valley and empties into the Mississippi. At times, originally, the waters of the west fork of the south branch of the Chicago river flowed across the said Continental Divide and into the DesPlaines river and mingled with the waters thereof. Prior to the admission of the State of Illinos into the Union in 1818, and subsequent thereto, said Lake Michigan, Chicago river, south branch thereof and the west fork of the south branch, and said Des Plaines and Illinois rivers were navigated by fur traders and others and formed a continuous line of water navigation upon which a large and extensive commerce was carried on. Boats in such commerce passed from Lake Michigan through and along said Chicago river to the south branch and west fork thereof, and by means of a small portage channel across said divide continued to the DesPlaines and thence to the Illinois river. Boats used in said commerce passed along and through said Illinois river to the said DesPlaines river and across said divide as aforesaid to the west fork and the south branch of the Chicago river through the Chicago river itself and thence into Lake Michigan.

Appreciating the usefulness of the waterway for commerce and the advantage to the country of its enlargement and improvement, the Congress of the United States on March 30, 1822, passed an Act concerning the Illinois and Michigan Canal which among other things provided:

> "Section 1: The State of Illinois be, and is hereby, authorized to survey and mark through the public lands of the United States the route of the canal connecting the Illinois river with the southern bend of Lake Michigan."

Said act further provided that certain lands on each said of the canal should be reserved for the State of Illinois for the purpose of aiding it in constructing the canal, and that the reservation and grant thereby made should be void if the State did not within three years thereafter survey and direct by law said canal to be opened and return a complete map thereof within three years to the Treasury Department. The State failed to fully perform these conditions.

However, on March 2, 1827, Congress passed another Act relating to the same subject matter which among other things provided:

> "Section 1: There be, and hereby is, granted to the State of Illinois, for the purpose of aiding the said state in opening a canal to unite the waters of the Illinois River with those of Lake Michigan a quantity of land equal to one-half of five sections in width on each side of said canal, and reserving each alternate section to the United States, to be selected by the Commissioner of the Land Office, under the direction of the President of the United States, from one end of the said canal to the other; and the said lands shall be subject to the disposal of the Legislature of said state, for the purpose aforesaid and no other: Provided that the said canal when completed shall be and forever remain a public highway for the use of the government of the United States, free from any toll or other charge whatever, for any property of the United States or persons in their service, passing through the same:"

Prior to the year 1830, and for sometime thereafter, water routes existed from the Great Lakes to the Atlantic Ocean along the St. Lawrence River. Great Britain refused to the people of the United States free navigation of these water routes, which made it necessary that the United States obtain an outlet to the Atlantic ocean from the Great Lakes for navigation purposes, by way of the Chicago river, DesPlaines, Illinois, Missis-

sippi rivers and Gulf of Mexico. In order to provide for this necessity, the said Acts of Congress of March 30, 1822 and March 2, 1827 were passed. It was also considered that this waterway would have a tendency to bind the states together and thus remove the danger of dissolution, which was then a subject greatly discussed, as is shown by the Memorial of the General Assembly of Illinois made just prior to the passage of the Act of March 2, 1827, which said memorial is, in part, as follows:

> "To the Honorable the Senate and House of Representatives of the United States of America in Congress assembled: The memorial of the General Assembly of the State of Illinois respectfully represents that the construction of a canal uniting the waters of Lake Michigan with the Illinois river, will form an important addition to the connecting links in the chain of internal navigation, which will effectually secure the indissoluble union of the confederate members of this great and powerful Republic. By the completion of this great and valuable work, the connection between the north and the south, the east and the west, would be strengthened by the ties of commercial intercourse and social neighborhood, and the union of the states might bid defiance to internal commotion, sectional jealousy and foreign invasion. All the states of the Union would then feel the most powerful motives to resist every attempt at dissolution. To effect so great and desirable an object, your memorialists believe to be of sufficient importance to engage the attention and awaken the munificent patronage of a government whose principle of action is the promotion of the general welfare."

Pursuant to the said Act of Congress of March 2, 1827 mentioned, the State of Illinois through its General Assembly and executive officers constructed and completed in the year 1848 a canal extending in a southwesterly direction from the west fork of the south branch of the Chicago river at or near Robey street in said City

of Chicago, to Joliet, Illinois, through the city of Joliet, thence along the DesPlaines and Illinois rivers, through Morris and Ottawa, to Utica, Illinois, where it connected with the Illinois river. To extend and improve navigation upon said Illinois river from said southern terminus of said Illinois & Michigan Canal the State of Illinois built two dams with locks in the Illinois river at the City of Henry and at Copperas Creek, and in the lower regions of the said Illinois river the United States for the same purpose constructed two dams with locks at the cities of Kampsville and LaGrange, Illinois.

The Act for the construction of the Illinois & Michigan Canal, being the one under which said canal was constructed and completed, was passed by the Illinois General Assembly on January 9, 1836. Section 16 of said Act provided, among other things that

> "The said canal shall not be less than forty-five feet wide at the surface, thirty feet at the base, and of sufficient depth to insure a navigation of at least four feet, to be suitable for ordinary canal boat navigation, to be supplied with water from Lake Michigan and such other sources as the canal commissioners may think proper, and to be constructed in the manner best calculated to promote the permanent interest of the country."

The Illinois and Michigan Canal, as originally planned pursuant to said Act of Congress of March 2nd, 1827, and the said Act of the General Assembly of Illinois of January 9th, 1836, contemplated the construction of the canal in such manner that the water necessary for its operation should be withdrawn by gravity from the west fork of the south branch of the Chicago river at the canal's northern terminus. This was known as the deep cut plan. Lack of funds, however, made it impossible for the canal to be so constructed, and it was finally completed in 1848 under what is known as the shallow

cut plan—that is, the bottom of the canal was of higher elevation than it was intended it should be under the deep cut plan. The water for the operation of the canal was taken from the west fork of the south branch of the Chicago river at the canal's northern terminus by means of water wheels, and also there was obtained from the Little Calumet river, in the watershed of Lake Michigan by means of the Calumet feeder, a certain amount of water for the canal's operation. This water was fed to the canal at or near Sag, Illinois.

Chicago's sewers were from the beginning, and until the times hereinafter mentioned, debouched into the Chicago river or into Lake Michigan. After the canal was completed in 1848, the volume of sewage from the rapidly growing population of Chicago very shortly caused noisome and unwholesome conditions to exist in the Chicago river which, during a large portion of each year, had but a small flow of water. This condition affected the health of the people, so that on February 16th, 1865, the General Assembly of Illinois passed an act which, in part, is as follows:

> "WHEREAS, it has been represented that the City of Chicago, in order to purify or cleanse Chicago river, by drawing a sufficient quantity of water from Lake Michigan, directly through it, and through the summit division of the Illinois and Michigan canal, would advance a sufficient amount of funds to accomplish this desirable object; and, whereas, the original plan of the said canal was to cut down the summit so as to draw a supply of water for navigation directly from Lake Michigan, which plan was abandoned, for the time being, after a large part of the work had been completed, only in consequence of the inability of the state to procure funds for its further prosecution; and, whereas, under the law creating the trust the plan of the summit division of the canal was changed, the level being raised so as to require the principal supply of water to be obtained through the Calumet feeder, subject to ser-

ious contingencies, and by pumping on to the summit with the hydraulic works at Bridgeport; now, therefore,

"Section 1. BE IT ENACTED BY THE PEOPLE OF THE STATE OF ILLINOIS, REPRESENTED IN THE GENERAL ASSEMBLY, That to secure the completion of the summit division of the Illinois and Michigan Canal, upon the origina! 'deep cut' plan, with such modifications and changes of line, if necessary, as will most effectually secure the thorough cleansing or purification of the Chicago river, and facilitate the execution of the work, the City of Chicago through its constituted authorities, may at once enter into an arrangement with the board of trustees of said canal, with a view to the speedy accomplishment of the work."

Said Act provided, further, that the canal should be built as originally planned by the Canal Commissioners in 1836, and that the money expended by the City of Chicago should be a vested lien upon the Illinois and Michigan Canal and its revenues, and that the State might relieve the lien by refunding to the City the amount expended.

Thereafter and pursuant to said Act of the General Assembly the City of Chicago passed an ordinance on or about June 5, 1865, which in part provided:

"Section 1. Be it ordained by the Common Council of the City of Chicago, that the plan of the Board of Public Works for cleansing the Chicago river and its branches by cutting down the summit of the Illinois and Michigan Canal below the level of Lake Michigan so as to draw from it at a low stage of water in the lake not less than twenty-four thousand (24,000) cubic feet of water per minute, is hereby approved, and said Board are hereby authorized to execute said work."

The ordinance further authorized the making of a contract with the trustees of the Illinois and Michigan Canal and appropriated money for the purpose of improving said canal. Pursuant to said Act of the General Assembly and said City Ordinance, the City of Chicago

did cut down the summit level of said canal and reconstructed and completed it upon the deep cut plan whereby not less than twenty-four thousand (24,000) cubic minute feet of water was drawn through said canal from the west fork of the south branch of the Chicago river and the said Great Lakes system of waterways, and the City of Chicago in performing said work expended the sum of approximately $3,000,000.

In 1861, the General Assembly of Illinois passed a resolution providing:

> "That the board of trustees of the Illinois and Michigan Canal be and are hereby authorized and instructed to cause prompt and thorough surveys, examination and estimates to be made of the Illinois river, and of the Illinois and Machigan Canal, and also of portions of the Des Plaines and Chicago rivers, and of the portage between said rivers, for the purpose of accurately ascertaining the comparative value, cost, efficiency, benefits and advantages, direct, prospective and incidental, of the different methods proposed or desirable for improving the navigation of the Illinois river, by dredging or excavation of the channel and wing dams, or by supplying water from Lake Michigan, through the enlargement and deepening of the Illinois and Michigan Canal, or otherwise, or by opening a channel from Lake Michigan, by way of the south branch of the Chicago river and Mud lake to the Des Plaines river, and down said canal to a point that will secure a free, flowing, ample and never-failing supply of water, sufficient for the navigation of the Illinois river at all seasons and times, when not obstructed by ice. Such surveys, examinations and estimates to include a plan of enlargement of the Illinois and Michigan Canal, sufficient for the introduction and use of stern-wheel river steamers and propellers upon it, and also of side-wheel river steamers, and to include also an estimate for the channel hereinbefore mentioned, of sufficient size to admit of full and free steamboat navigation from the Illinois river to Chicago and Lake Michigan, as well as a size sufficient

for supplying water for all the deficiencies of navigation in the Illinois river, at all seasons."

The said Illinois and Michigan Canal was completed about the year 1871 by the City of Chicago upon the deep cut plan so that a large amount of water was withdrawn by gravity from the west fork of the south branch of the Chicago river for the purpose of relieving the said Chicago river and the south branch of the unhealthy condition in which it then existed. The metropolitan area of which the City of Chicago was the center increased rapidly in population so that in the year 1881 this increased flow through said canal and consequent withdrawal of water from the west fork of the south branch ceased to cleanse and purify the river, and it became necessary to adopt some other expedient not only for sanitary purposes, but also with the purpose of navigation in view. Therefore, the General Assembly of Illinois in 1881 adopted the following resolution:

"JOINT RESOLUTION OF ILLINOIS LEGISLATURE.
ADOPTED 1881.

"Concerning Chicago Sewage in Illinois and Michigan Canal.

"WHEREAS, the State of Illinois, in General Assembly, did, on the sixteenth day of February, 1865, grant and authorize the City of Chicago, in the State of Illinois, to deepen the Illinois and Michigan Canal for the purpose of, and with the intent to better, the system of sewage of the said City of Chicago by permitting a free flow of water from Lake Michigan through the Chicago river and said canal to the Desplaines and Illinois rivers; and, the City of Chicago did perfect said improvement in conformity with said permission; and,

"WHEREAS, the great fire in the said City of Chicago on the eighth and ninth days of October, A. D. 1871, did so greatly damage the assessable property of a very large number of its citizens and taxpayers,

and the People of the State of Illinois did, by its General Assembly, refund to the said City of Chicago the amount of the cost of deepening the Illinois and Michigan Canal, said sum refunded being in gross two millions, nine hundred and fifty-five thousand, three hundred and forty dollars; and,

"WHEREAS, the deepening of the canal as aforesaid, has proved to be totally inadequate for the purposes intended, and the large amount of sewage of the City of Chicago being far greater than the capacity of the canal and the water passing through it to deodorize and render innocuous; and,

"WHEREAS, the foulness of the water annually causes the death of millions of fish in the Desplaines and Illinois rivers, that float to the shores and decay; and,

"WHEREAS, said sewage, in an entirely undecomposed and putrid mass, is carried by the current of the canal into the Desplaines river, and thence into the Illinois river, and in its foulest condition is thus transported to and below the City of Peoria, in said State, rendering the air, at all points along its passage, so impure and foul as to be exceedingly offensive, and taking with it germs of disease of all kinds prevalent in the City of Chicago, and thus spreading them broadcast through the entire Desplaines and Illinois river valleys, causing thereby much illness as well as poisoning of the blood, and debilitating the systems of 200,000 people; and,

"WHEREAS, careful investigation leads our people to fear that an epidemic may spread over said section of the State of Illinois from the causes above stated; and,

"WHEREAS, in addition to the above distress, there has been a great loss to property, business industries, and to the communities in said region, by reason of the causes herein mentioned; and,

"WHEREAS, prior to the deepening of said Illinois and Michigan Canal, the water necessary for all purposes of navigating said canal and propelling of machinery was obtained from the Desplaines river and the Calumet feeder, through Lane's lake; and,

"WHEREAS, the bed of the Desplaines river, at the summit and thence westward along the line of and

adjacent to the canal, is, at a low stage of water, eight (8) feet above the surface level of the canal, and will average a supply of water sufficient for all canal and power purposes during the seasons of navigation; and,

"WHEREAS, the supplying of the canal from these sources will so dilute and weaken the sewage of the City of Chicago, as to greatly relieve it of its foulness and stench, to the great delight, relief and health of the people near to and bordering upon the line of the canal, the Desplaines and Illinois rivers; therefore, be it

"RESOLVED BY THE SENATE, THE HOUSE OF REPRESENTATIVES CONCURRING HEREIN, that the Board of Canal Commissioners of the Illinois and Michigan Canal be, and they are hereby, directed to cause sluiceways of sufficient capacity, with the proper guard-gates, to be opened from the Desplaines river to the canal, at or near the summit, in Cook County, and at or near Lemont, in Cook County, and also to construct a dam across the former Calumet feeder at such suitable point as will cause the waters from Lane's lake to flow into the canal; that said Canal Commissioners shall immediately commence, to construct and improve said sluices and feeders in the order named, and pay for the same out of any moneys in their hands or control as Canal Commissioners, resulting from the earnings of the canal. The amount to be expended as above designated in the prosecution of said improvement shall not, however, exceed the sum of ten thousand dollars: Provided, that the Canal Commissioners shall first confer with the Mayor or other proper authorities of the City of Chicago, and if said City shall proceed without delay to cause a flow into the canal from the Chicago river sufficient to dilute and purify the waters, and thus remedy the evils complained of, said flow to be not less than 60,000 cubic feet per minute, including the ordinary flow into the canal from the Chicago river, or so much thereof as in their judgment said canal can carry, and if this shall be accomplished by the first day of September, 1881, the Commissioners shall accept it in lieu of obtaining a supply of water from the other sources named: Provided, further, that said Commissioners are hereby directed

to take care of the 60,000 cubic feet per minute, above contemplated, if so furnished by the City of Chicago: Provided, further, that the adoption of this resolution shall not commit the State to a system of permanent drainage of Chicago sewage through either the canal or Desplaines or Illinois rivers, but that the State reserves the right to require the City of Chicago in future years to take care of its sewage through other channels: And provided, further, that if the said City of Chicago shall erect pumping works for the purpose of causing such flow as aforesaid, the Canal Commissioners shall allow the said city to erect said pumping works upon the canal lands in Bridgeport; and said City shall support, control and manage said pumping works subject to the direction of the Canal Commissioners, relative to the amount of water to be received into the canal from time to time, as the exigencies of the canal may require, but at the expense of the said City of Chicago: Provided, further, that the City of Chicago, its officers, agents or employes shall derive from this resolution no right to control or exercise any authority over any of the gates, locks or dams of said canal."

The pumping works provided to be constructed under said resolution were thereafter by the City of Chicago placed in operation at the northern terminus of said Illinois and Michigan Canal, whereupon until the opening of the Sanitary District channel in 1900 they were operated, resulting in the withdrawal by means of said pumps and said gravity flow of not less than 60,000 cubic minute feet of water from the west fork of the south branch of the Chicago river and said Great Lakes system of waterways. Shortly after said pumps had been installed and placed in operation it was ascertained that the water so withdrawn was not sufficient to cleanse the said Chicago river and eliminate the unhealthy conditions existing. The Chicago river and its north and south branches, and the west fork thereof became odious to the nostrils, injurious to the health of the community,

and its mass of undigested sewage sludge was at times of high water and when the Chicago river was at flood stage, carried out into Lake Michigan, polluting the water supply of the people of Chicago and its suburbs and surrounding communities. This caused great epidemics of typhoid fever and other water-born diseases. Frequent epidemics of typhoid fever were often of such violence that in each such epidemic as many as 190 persons per 100,000 of population died therefrom. The average death rate from typhoid fever per year prior to the opening of the drainage channel was approximately 75 per 100,000 persons. Consequently, the City Council of the City of Chicago on or about January 26, 1887, passed an ordinance appropriating money for and authorizing the Mayor to appoint a commission to make a complete and comprehensive study of the best means and method to be adopted to protect the water supply of Chicago, its suburbs and surrounding communities.

The water of Lake Michigan furnished the only source of drinking water supply for the people of Chicago and its surrounding territory from the beginning of its existence to the present time.

On or about January 30, 1887, said commission, so appointed by the Mayor of Chicago, known as the Drainage and Water Supply Commission, made a complete and comprehensive report with recommendations as to the best method to be pursued in solving the problems placed before it, pursuant to said ordinance. Various plans for the protection of the said water supply were suggested and considered. The one recommended was the one that was embraced and provided to be carried out under the Act of the Illinois General Assembly entitled:

> "An Act to create Sanitary Districts and to remove obstructions in the Desplaines and Illinois rivers." Approved May 29, 1889. In force July 1, 1889.

For the convenience of the Court the said Act of the General Assembly, including the amendments of June 10, 1895, May 13, 1901 and May 14, 1903, are attached hereto as Exhibits A, A1, A2 and A3, respectively and are made a part of this answer.

The said Act provided for building and The Sanitary District of Chicago, organized thereunder, constructed a canal across the Continental Divide, of a capacity in the rock sections thereof of upwards of 10,000 cubic seconds feet of water. The Act provided that the canal in such rock sections should have a capacity of not less than 10,000 cubic seconds feet of water. This canal is known as the Main Channel of The Sanitary District of Chicago, and was provided to be and is constructed for such maximum capacity so that the Chicago river may at all times be reversed and flow from Lake Michigan to the Desplaines river. The maximum flood run-off of the Chicago river drainage area was and is 10,000 cubic seconds feet of water.

The Act provided also that there should always be diverted through said canal for sanitary purposes at least 20,000 cubic feet of water per minute for each 100,000 of population of the district in order to properly oxidise and digest the sewage thus diverted. The diversion from Lake Michigan of the Chicago river at all time would prevent, and did and does prevent any sewage that should be or is emptied into the Chicago river and its branches by sewers, from entering Lake Michigan and thus polluting the drinking water supply.

The Act further provided for the construction of intercepting sewers, and they were so constructed to divert to the Main Channel of The Sanitary District all of the sewage that formerly emptied directly into Lake Michigan. Various other works supplementary to the main diversion works were included in the construction to make

the main diversion works of The Sanitary District operate more effectively, thus preventing any pollution of the water supply of the people of The Sanitary District from sewage and other refuse contained in sewers.

The said Act further provided that the Main Channel of The Sanitary District should be constructed not less than 18 feet in depth, and that the current in said Main Channel should not exceed three miles per hour. The channel actually constructed is upwards of 200 feet in width, 24 feet in depth, with a current much less than the current permitted by statute. It is capable of allowing the largest boats navigating the Great Lakes to pass freely and without hindrance. Railroad and highway bridges across the said Main Channel have been so constructed and completed, that they may be moved, swung or raised, so that boats or other water craft may pass without obstruction by said bridges.

The said Act also provided that the Main Channel should be when constructed, used as a highway of commerce and considered a navigable stream. At the northern terminus of the said Main Channel at Lockport, locks have been constructed, connecting it with the Illinois and Michigan Canal at that point, so that for years past the said canal has been used as a navigable waterway in place of the old Illinois and Michigan Canal, which lies parallel to it from its northern terminus at the west fork of the south branch of the Chicago river to a point at or near Lockport, Illinois and just north of the City of Joliet.

The said Act under which The Sanitary District was organized and under which the said Main Channel was constructed was passed pursuant to the authority of the said Act of Congress of March 2, 1827 hereinbefore mentioned.

The construction of said Main Channel of The Sanitary District providing for the diversion of water and

for navigation thereon was also pursuant to various reports and recommendations made by the engineer officers of the United States army, which reports and recommendations were made under the direction of various Rivers and Harbor acts of Congress. Coincident with activities of the State of Illinois and the City of Chicago looking towards the construction of a channel across the Continental Divide of larger dimensions than the old Illinois and Michigan Canal, heretofore described, for the purpose of navigation and also to serve the sanitary needs of Chicago, were the activities of the Engineer Corps of the United States army. Said Engineer Corps, as before stated, recommended in various reports the construction of a large canal, withdrawing from Lake Michigan a large amount of water, across the Continental Divide, to form the most important link or section of the Deep Waterway from Lake Michigan to the Gulf of Mexico. The said Act of the General Assembly of Illinois, under which The Sanitary District was organized and constructed its works, was reported to Congress by the Secretary of War through the annual report of the Chief of Engineers of the United States army for the year said Act was passed by said General Assembly; and the said Chief of Engineers, of the United States army, also reported to Congress from year to year the progress of the construction of the Main Channel of said Sanitary District.

The said annual reports of said Chief of Engineers, United States Army, were printed and largely distributed in the State of Wisconsin and in other states.

The flow of the Chicago river and its north and south branches in a state of nature was small and insignificant and did not exceed 30 cubic seconds feet at low water which existed during a large portion of each year. The diversion of 24,000 cubic minutes feet of water by the

deep cut plan of construction of the Illinois and Michigan Canal, and the additional diversion resulting from the operation of said pumps at Bridgeport in the year 1881, caused the reversal of the current and flow of the Chicago river during the greater portion of each year. Thus, for years prior to the opening of the main channel of the Sanitary District on January 17, 1900, the said Chicago river did not flow generally into Lake Michigan, but flowed in a reversed direction to the Illinois and Michigan Canal, and to the Desplaines river.

There is appended hereto as Exhibit "B" (following page 113), a map showing the territorial limits of the Sanitary District of Chicago and the location of said Main Channel with its intercepting sewers and adjuncts.

6. These defendants and each of them admit that the General Assembly of Illinois passed an act, entitled "An Act to create sanitary districts and remove obstructions in the Desplaines and Illinois rivers," approved May 29, 1889, in force July 1, 1889, as is alleged in paragraph 6 of said bill of complaint, and that Sections 23 and 24 of said Act are set forth *in haec verba* in said paragraph 6 of said bill of complaint.

7. These defendants admit that in November and December of the year 1889, The Sanitary District of Chicago was organized under said act of the General Assembly of Illinois, and that it has since continuously existed as such Sanitary District under said acts of 1889 and acts amendatory and supplementary thereto; that at the time of its organization, the defendant, The Sanitary District of Chicago, comprised a territory of about 185 square miles in area; that by various acts of the General Assembly of Illinois, the area of said defendant, The Sanitary District, has been increased, and the area of said Sanitary District now comprises approximately 395

square miles, extending from the Illinois state line, on the south and east to the northern boundary of Cook county on the north with about 33 miles of frontage on Lake Michigan.

These defendants, however, aver that the additions to the territory of the said Sanitary District, made pursuant to acts of the General Assembly of Illinois, passed since the organization of said district, were made for the purpose of preventing contamination of the water supply and thus enabling The Sanitary District of Chicago to better and more effectively accomplish the main purpose of its organization; that the population added to it by said acts of the General Assembly is small and of little consequence compared with the population then and now existing within the area which originally comprised the territory of The Sanitary District prior to the passage of said acts, adding area to said territory.

8. These defendants admit the allegations of paragraph 8 of said bill of complaint, with reference to the construction of the main channel of The Sanitary District, except as to the time when said construction was commenced. As to such allegation these defendants aver that the construction of the main channel of said The Sanitary District of Chicago was commenced in the year 1890, and long prior to said 3rd day of September, 1892.

9. These defendants admit that the allegations of Paragraph 9 of said bill of complaint, and that Section 20 of the said Act of the General Assembly of Illinois of 1889, under which The Sanitary District of Chicago was organized, was amended in 1895 by the General Assembly of Illinois, as is alleged. But these defendants aver that without said amendment the said section of said original act provided for the diversion and flow continuously through the main channel of "at least 200 cubic feet per

minute for each 1,000 population of the district drained thereby,'' which is equivalent in amount to 20,000 cubic feet per minute for each 100,000 population.

10. These defendants admit the allegations of Paragraph 10 of said bill of complaint, except as to the date when the said main channel of The Sanitary District was opened. These defendants aver that said main channel was opened on or about January 17, 1900.

11. These defendants admit the allegations of Paragraph 11 of said bill of complaint, except as to the effect of said act of 1895 in said bill of complaint mentioned. As to said act of 1895, these defendants aver that the duty of diverting 20,000 cubic feet per minute of water for each 100,000 population of the Sanitary District, through the main channel, was imposed by the original act passed in 1889 and was not solely provided for by said amendment of 1895 mentioned.

12. These defendants admit the allegations of Paragraph 12 of said bill of complaint.

13. These defendants admit the allegations of Paragraph 13, of said bill of complaint, with reference to the construction of a hydro-electric power plant at Lockport, Illinois, and the capacity thereof.

14. These defendants and each of them deny that the object and purpose of operating said main channel of said Sanitary District since the completion of said hydro-electric plant in the year 1907 has been and is two-fold. On the contrary, these defendants aver that the primary purpose of operating said works is to divert water from Lake Michigan for sanitary purposes; that water has not been diverted at any time for the operation of said hydro-electric works in excess of the amount required for sanitation and navigation, and the use of said waters for generating electrical energy has in no way affected

navigation upon any navigable water of the United States, or the use of such waters for sanitation; that the amount of water diverted from time to time has been and is as near as possible the amount provided to be diverted according to the population of the Sanitary District as provided by said Sanitary District Act; that at no time has the mean daily, or mean monthly, or mean yearly flow or diversion exceeded the said amount; that prior to the construction of the said hydro-electric plant, the energy produced by said water as it passed from the southern terminus of the said main channel to the Desplaines river was entirely wasted and served no purpose; that the only purpose of constructing and operating said hydro-electric plant was to conserve this energy to be used in the operation of the various plants and works of the Sanitary District requiring the use of electrical energy, and the surplus energy has been and is sold; that a large amount of such electrical energy so produced has been and is used for the purpose of lighting the streets of the City of Chicago and its suburbs, and also for lighting the boulevards and parks of the various park systems of Chicago; that the energy so used for such public purposes has been and is sold by the Sanitary District at the cost of production.

15. These defendants, and each of them, admit that the mean yearly amount of water passing through said Sanitary District canal, at its westerly terminus, for the years 1900 to 1917, both inclusive, was approximately the amount for said years set forth in said Paragraph 15 of said bill of complaint. These defendants deny that the said figures are based on methods of calculation which result in very considerably, or to any extent underestimating any amounts of actual flow through said canal. On the contrary these defendants aver that the methods used to calculate said yearly mean

flow of water are methods which should produce results as nearly accurate as could be produced by any method of calculation. These defendants further say that the flow of water through said canal for the first four months of the year 1922 has been approximately the amount required by the Sanitary District Act, according to the population of the Sanitary District, namely—twenty thousand cubic feet per minute for each one hundred thousand population.

16. These defendants admit that all the water diverted from Lake Michigan by defendants through and by means of the Sanitary District main channel, is carried into the Mississippi Valley, but these defendants deny that said water is permanently extracted from the Great Lakes system.

These defendants and each of them deny that the mean level or surface elevation of the water of Lakes Michigan, Huron, Erie and Ontario, and the various waterways connecting said lakes and the St. Lawrence river above tide-water has been or will be lowered 6 inches, or any other amount below the level that would have existed or would exist in said lakes and waterways in the absence of such diversion. On the contrary these defendants and each of them aver that the surface elevation of said Lakes Michigan, Huron, Erie and Ontario and their connecting channels has not been lowered by said diversion; that if there has been any lowering of the surface level of water of said lakes, it has been and is only a theoretical lowering, and that by reason of said diversion, if there has been actually any lowering of said lake levels below what they would have been had such diversion not existed, such lowering has not been to any appreciable extent and has been so small and inconsequential that it has not, and will not, have any effect upon the said

Great Lakes system of waterways, or any of said harbors, or navigation thereon.

These defendants further aver that the water diverted to the Gulf of Mexico or the Mississippi river valley returns to the Great Lakes system by processes of nature which are continuously going on, by which the water flowing from the Great Lakes system from any and all outlets is returned to said Great Lakes system, so that the amount of water stored in the Great Lakes system and each of said lakes and waterways is approximately the same from one period of years to another.

17. These defendants, and each of them, deny the allegation of said bill of complaint to the effect that at no time during the period of at least six years last past, or at any other time has it been necessary, for the protection of the health of the people of the district, or for any other purpose, that sewage of The Sanitary District of Chicago be disposed of by means of said canal; that it has been entirely feasible or to any extent feasible during all of said period, or during any period, or is now feasible for said district to adopt and use so-called scientific methods of sewage disposal. These defendants further deny that there is in successful or practical operation for a large metropolitan population, such as exists in Chicago and its suburbs, and surrounding urban communities so-called artificial or scientific sewage purification works that do not have as a basis the disposition of sewage by the so-called dilution method of sewage disposal provided for by the diversion works of The Sanitary District of Chicago.

These defendants aver that it would be impossible or impracticable to construct and operate works for the disposition of sewage of The Sanitary District of Chicago without the use of substantially the amount of water provided to be diverted under said Sanitary District Act;

that works for the disposition of sewage of the Sanitary District, to be operated with the diversion of an amount of water from Lake Michigan of substantially less than that required by the Sanitary District Act, above mentioned, or the amount of 4,1o7 cubic seconds feet, would cost to construct and complete, upwards of one hundred and fifty million dollars, and the cost of operation of such works per year, over the cost of operating the diversion works of the Sanitary District, as now constructed and in operation, would equal the sum of approximately five million dollars; that The Sanitary District of Chicago is without funds or resources with which to construct such works within any reasonable period of time; that the method provided for under the said Sanitary District Act for the disposition of sewage, within the territorial limits of the Sanitary District, was, and it was at the time of the passage of said Act, and has been since and now is the only practicable and feasible means by which said sewage may be disposed of and the water supply for the people of the Sanitary District protected; that the art of sewage disposal, by so-called scientific means, other than by dilution, has been for a long period of years in a state of change; that various methods have been suggested and recommended by eminent sanitary engineers, and they have been used and tried for a period of time, only to be shortly discarded as impracticable and some other method or system adopted in their stead, which system or method, in turn, followed the same course as the previous ones; that to keep the water supply free from pollution any method for the disposal of sewage which may be adopted for Chicago must necessarily have, as its basis, the condition that no sewage or effluent coming from so-called artificial sewage purification works shall, at any time, or by any possibility should find its way into Lake Michigan by way of the Chicago river, or from

any other source; that a diversion of water from Lake Michigan of less than the maximum run-off of the Chicago river drainage area, or the maximum flow of the Chicago river would make it possible for the Chicago river to at times flow toward Lake Michigan, thus carrying with it any sewage or effluent from sewage purification works, which must necessarily be in said river under any plan of sewage disposal; that The Sanitary District of Chicago has expended in the construction of its various diversion works, above described, the sum of about ninety million dollars; that the substantial reduction in the amount of the flow or diversion of water from Lake Michigan, below that provided for by said Sanitary District Act would render useless the said works for sanitary purposes, and therefore the larger portion of said sum would be lost to the people of the Sanitary District; that the following table shows the expenditures made by defendant Sanitary District on its various works for diversion of water to December 31, 1915:

SANITARY DISTRICT OF CHICAGO
COST OF RIGHT OF WAY AND CONSTRUCTION OF PLANTS, CHANNELS AND BRIDGES.

Calumet Sag Channel construction prior Dec. 31, 1915	$ 5,220,766.35
Calumet Sag Channel bridge construction prior Dec. 31, 1915	154,323.44
Calumet Sag Channel "right of way" channel and bridge construction	7,891,798.61
Chicago River main outlet and South Branch cost of right of way improvement and bridge construction	782,412.77
Chicago River North Branch, bridge construction prior Dec. 31, 1915	26,078.10
Chicago River North Branch, dredging, Docking, etc., prior Dec. 31, 1915	382,124.52
Chicago River North Branch, cost of right of way, improvement and bridge construction	5,894.03
Chicago River South Branch, bridge construction, prior to Dec. 31, 1915	3,579,041.30
Chicago River South Branch, dredging, docking, etc., prior to Dec. 31, 1915	2,518,526.61
Calumet River improvements, construction	4,985.35
Conduit and sewer outfall construction	9,368,588.07
Controlling works Calumet Sag Channel, construction, Dec. 31, 1915	16,715.44
Controlling works and Des Plaines River improvement and construction (Joliet project), Dec. 31, 1915	161,830.70
Controlling works at Lockport, main channel, Dec. 31, 1915	332,143.86
Controlling works, main channel, bridge construction, Dec. 31, 1915	8,572.87
Des Plaines River diversion bridge, construction, Dec. 31, 1915	152,892.42
Des Plaines River improvement bridge construction (Joliet project), Dec. 31, 1915	344,112.17
Des Plaines River diversion construction, Dec. 31, 1915	1,066,214.04
Des Plaines River improvement (Joliet project), Dec. 31, 1915	1,309,164.21
Des Plaines River improvement, cost of right of way, improvement and dredge construction	3,383.84
Kampsville and La Grange dams, improvements	24,349.36
Machinery and tools, Dec. 31, 1915	110,442.07
Main channel extension and Des Plaines River diversion construction, Dec. 31, 1915	860,601.24
Main channel construction, Dec. 31, 1915	19,600,122.71
Main channel, bridge construction, Dec. 31, 1915	2,630,627.58
Main channel, cost of right of way, channel and bridge construction	263,751.08
Main channel extension, construction, Dec. 31, 1915	2,269,509.22
Main channel extension, bridge construction, Dec. 31, 1915	151,998.93
Main channel extension, cost of right of way, channel and bridge construction	127,849.30
Miscellaneous structures and equipment	60,340.68
North shore channel, construction, prior Dec. 31, 1915	1,304,516.61
North shore channel, bridge construction, prior Dec. 31, 1915	634,303.14
North shore channel, cost of right of way, channel and bridge construction	135,061.80
Pumping station structures and equipment	3,710,878.80
Real estate, Calumet-Sag pumping station, Dec. 31, 1915	2,710.36
Real estate, Calumet sewer, pumping station, Dec. 31, 1915	12,423.40
Real estate, Fifty-second avenue sewage disposal works, Dec. 31, 1915	39,505.88
Real estate, Lawrence avenue intake crib, Dec. 31, 1915	22,500.32
Real estate, Morton Grove experimental sewage plant	12,946.64
Real estate, Thirty-ninth street pumping station, Dec. 31, 1915	633,917.96
Real estate, stock yards testing station, Dec. 31, 1915	920.68
Real estate, Wilmette pumping station, Dec. 31, 1915	386,461.74
Right of way, Calumet sag channel, Dec. 31, 1915	611,272.68
Right of way, Desplaines River Diversion, Dec. 31, 1915	227,541.89
Right of way, Desplaines River Improvement, Dec. 31, 1915	680,440.32
Right of way, main channel, Dec. 31, 1915	2,139,565.58
Right of way, main channel extension, Dec. 31, 1915	29,520.70
Right of way, North Branch Chicago River, Dec. 31, 1915	17,150.00
Right of way, North Shore Channel, Dec. 31, 1915	1,218,705.59
Right of way and easements, North Shore Conduits, Dec. 31, 1915	6,362.32
Right of way, South Branch Chicago River, Dec. 31, 1915	5,484,956.34
Sewage Treatment Plant Construction	5,901,499.27
Sewer construction, Calumet, Dec. 31, 1915	73,011.82
Sewer construction, Fifty-second Avenue and disposal project	260,682.43
Sewer construction, Niles Center sewer, Dec. 31, 1915	319.27
Sewer construction, North Shore Conduits, Dec. 31, 1915	614,746.04
Sewer construction, sewer outfalls at Summit, Ill., Dec. 31, 1915	745.00
Sewer construction, Stock Yards sewer, Dec. 31, 1915	1,067.12
Sewer construction, West Thirty-ninth Street & Western Ave., Dec. 31, 1915	162,249.79
Special construction works	163,709.67
Structures and equipment for Sanitary Improvements, sewage & Special Investigations & experiments	95,837.07
Water power development at Hickory Creek	14,663.35
	$83,969,354.45

18. These defendants, and each of them, deny that the diversion of waters by way of said main channel of the Sanitary District has diminished the utility of the ports of Wisconsin, described in paragraph 4 of said bill of complaint, and in paragraph 4 of this answer, and that it has reduced, by six inches or any other amount in each of said ports, the draft of vessels which can be accommodated therein for loading and unloading. These defendants are not informed as to the per cent of tonnage of freight received at said ports which consists of coal shipped from eastern states, and which coal, except for the amount consumed at the ports themselves, is then carried by rail to the large number of cities, villages and towns in the State of Wisconsin and in other states to the west of Wisconsin, and constitutes the principal source, or any other source of supply of coal for the State of Wisconsin in its proprietary capacity as owner of many public buildings and institutions, and for many thousands, or any number of individuals, and industrial plants located in said state, and therefore these defendants ask that complainant be required to make strict proof of such allegations. These defendants are not informed as to the character or type of vessels that carry coal to said ports, or the amount of their carrying capacity, or the rates of freight that they are capable of being operated upon when loaded to maximum capacity, or to any other capacity, and therefore ask that strict proof be required. These defendants admit that every inch of normal draft which vessels are unable to utilize reduces their cargo carrying capacity by a number of tons. These defendants, and each of them, aver that the diversion of water from the Great Lakes by means of the Sanitary District works has not in any way affected the draft which vessels entering the said ports are able to utilize and that their cargo carrying capacity has not

been, and is not, reduced because of any such diversion. These defendants further aver that the commerce described in paragraph 18 of said bill of complaint is interstate commerce and is carried on upon navigable waters of the United States, over which the United States has exclusive jurisdiction, and the complainant herein has no jurisdiction to complain of any supposed interference with said navigable waters, and therefore these defendants, and each of them, move that the allegations with reference to said commerce and with reference to any supposed interference by said diversion of water upon said navigable waters of the United States be stricken and dismissed from said bill of complaint. These defendants further aver that all of the said harbors or ports described in said bill of complaint require, for their maintenance, constant dredging each year under normal conditions, and any dredging made necessary by virtue of any supposed effect of said diversion upon said ports or harbors would be and is negligible and of no consequence.

19. These defendants admit that in addition to the Wisconsin ports enumerated, located on the shores of Lake Michigan, there are a large number of ports located on the shores of Lake Michigan in the states of Illinois, Indiana and Michigan, on Lake Huron in the states of Michigan and the Dominion of Canada, on Lake Erie in the states of Michigan. Ohio, Pennsylvania and New York and the Dominion of Canada, and on Lake Ontario in the State of New York and the Dominion of Canada. These defendants deny that the diversion of water from the Great Lakes by The Sanitary District works has caused, or will cause the lessening of the utility of all or any of said ports on said lakes, and of the waterways connecting said lakes in the same, or any other manner described with reference to the Wisconsin ports on Lake Michigan; that in the conduct of

transportation between Wisconsin ports and the said ports in other states the possible loading of vessels bound to, or from such other ports is reduced by many tons, or by any number of tons because of said diversion. These defendants further deny that the diversion of water through The Sanitary District works has affected or injured the traffic between said states and the Wisconsin ports of Superior, Ashland and Washburn, or either one of them, located on Lake Superior. These defendants are not informed as to the amount or character of the commodities carried by boats or vessels between the said Wisconsin ports located on Lake Superior, and the various ports located on Lakes Michigan, Huron, Erie and Ontario in other states, and ask that strict proof be required. These defendants deny that the said diversion of water through the said Sanitary District works has caused or will cause loss of many millions of dollars, or any other sum of money to the people of the State of Wisconsin, or any of the people of Wisconsin, or any other person whomsoever.

These defendants aver that the commerce described in said paragraph 19 of said bill of complaint is commerce carried on over and upon navigable waters of the United States, over which Congress has assumed and has exclusive jurisdiction; that the supposed injury and damage, so alleged in said bill of complaint, concerns and relates to interference with navigable waters of which the said complainant has no right or jurisdiction to complain, and therefore these defendants, and each of them move that the said allegations in paragraph 19 of said bill of complaint be stricken and that the said bill of complaint as to such allegations be dismissed.

20. These defendants, and each of them, deny that the diversion of water, as aforesaid, has impaired navigation upon the Chicago river; that a current thereby has

been introduced into said river so swift as to make navigation thereof difficult or dangerous. But on the contrary these defendants, and each of them aver that there is no current in the Chicago river, or the south branch thereof or its fork, or the north branch of the Chicago river injurious to, or materially affecting navigation upon said river or its said branches; that to properly provide for said diversion so that there would be no current injurious to, or materially affecting navigation on said rivers and its branches, the defendant, The Sanitary District of Chicago, pursuant to authority from the Secretary of War, deepened, widened and straightened said river and its branches, and replaced old center pier bridges with new and improved bascule type of bridges; that the said Chicago river and its south branch, and the west fork was, before The Sanitary District improved same, as aforesaid, narrow, tortuous and shallow, being at points less than ninety feet in width and only seventeen feet deep, over practically the entire course; that the said defendant The Sanitary District, has widened the said river and its branches so that it is now, at all points, upwards of two hundred feet in width, and has deepened the channel of said river and its branches to twenty-six feet at all points; that in making said improvements, the said defendant, The Sanitary District of Chicago, has expended upwards of thirteen million dollars, as will be hereinafter more specifically described; that the Chicago river and its said branches, to the terminus of the said main channel of The Sanitary District is of such depth and width that the largest boats navigating the Great Lakes may traverse the course of said rivers, and the bridges across the said rivers are so constructed that they may be moved out of the way of any such boats so desiring to pass. These defendants deny that the said diversion has had any effect whatso-

ever upon the commerce of said Chicago river and its branches, or has in any manner, or to any extent, reduced the tonnage carried thereon. Upon the contrary, these defendants aver that the improvement of the Chicago river and its branches, by The Sanitary District, has had the effect to increase the possible tonnage on said Chicago river and its branches over what it would have been had the said defendant, The Sanitary District, not created said diversion and made the improvement in navigation on said rivers, as stated. These defendants further aver that no part of the said Chicago river and its said branches has become closed by reason of said diversion, or has been made inaccessible to the commerce of the people of Wisconsin, or any other person or persons.

21. These defendants, and each of them admit, that prior to the construction of said canal of The Sanitary District of Chicago, the Chicago, DesPlaines and Illinois rivers constituted navigable waterways of the United States, extending from Lake Michigan on the east, to the Mississippi river on the west. These defendants admit that the defendant, The Sanitary District, diverted certain portions of the DesPlaines river from its original bed; but deny that said defendant modified or altered the navigable capacity of said waterway by any of such diversions. These defendants further deny that the said Sanitary District diversion has had any effect upon the navigable capacity of the west fork of the south branch of the Chicago river west of the commencement of said canal. These defendants deny that said canal has become in fact a substitute for the old navigable waterway as defined in said bill of complaint and that said canal is now the only practical means of navigation by water from Lake Michigan to the Mississippi river. In this connection these defendants aver that said canal of the Sanitary

District has become practically a substitute for the Illinois and Michigan Canal from Chicago to Joliet and is now the only practical means of navigation between the Chicago river and the Illinois and Michigan Canal at Joliet; that that portion of the Illinois and Michigan Canal extending north from Joliet as originally constructed is in its present state useless as a means of navigation on account of the lack of sufficient water therein and because of various obstructions in the bed of said Canal; that the portion of said Illinois and Michigan Canal extending from Joliet to the Illinois river at LaSalle is, however, now used and operated for navigation purposes. And these defendants aver that since the construction of said main channel of said district commerce has used the modern, complete and practicable waterway provided by The Sanitary District's main channel to the City of Joliet and the old Illinois and Michigan Canal to the Illinois river near LaSalle where it follows the Illinois river to the Mississippi; that said Canal of The Sanitary District is six times as deep and four times as wide as the old Illinois and Michigan canal as it existed, and as it was operated prior to the completion of the main channel of the District. These defendants further deny that they, or either of them have refused expressly, or otherwise, to concede that the said canal is a navigable waterway of the United States, or that they or either of them have undertaken to bar the Government of the United States from the use of same for its purposes, or for interstate commerce. These defendants aver that the said canal of the District has been used, and is now used and operated in such manner as to make navigation thereon free, easy and convenient, and that it serves the purposes of navigation, as well as sanitation, and that the use for sanitation has not conflicted with, and does not conflict with, has not impaired and does not

impair the use for navigation. These defendants further aver that the conditions provided for under said Section 24 of said Act of 1889 have been nullified and eliminated by Section 3 of said Act of May 14, 1903, in force July 1, 1903, as follows:

> "Said Sanitary District shall permit all watercraft navigating, or proposing to navigate said Illinois and Michigan Canal, to navigate the water of all said channels of said Sanitary District promptly, without delay, or payment of any tolls at locks, or charges for so navigating in said channel. The rules of the United States Government now in force regulating navigation on the Chicago river shall govern navigation on the channels of The Sanitary District of Chicago. * * *"

These defendants, and each of them further aver that the matters and things complained of in said paragraph 21 relate to navigation upon navigable waterways of the United States, over which the United States has assumed, or has exclusive jurisdiction, and of which the said complainant has no jurisdiction or authority to complain, and therefore these defendants, and each of them move that said allegations of paragraph 21 be stricken from said bill of complaint and dismissed therefrom.

22. These defendants deny that the amount of water necessary to permit said canal of said Sanitary District to be operated for navigation purposes only, does not at the present time exceed 500 cubic feet per second, or that the amount of water which may, in the future be required for the operation of said canal for navigation purposes only, if permitted to be operated for such purposes and to the fullest extent of its capacity, will not exceed one thousand cubic feet per second. Upon the contrary, these defendants, and each of them, aver that the amount of water required for navigation on said

canal, and upon the Illinois Waterway (hereinafter described), extending from the southern terminus of said canal at or near Joliet, on the DesPlaines and Illinois rivers, is approximately the amount of ten thousand cubic seconds feet of water, which said amount of water can only be obtained from Lake Michigan by means of the diversion works of The Sanitary District.

23. These defendants admit that paragraph 23 of said bill of complaint contains correct and true copies of various documents, or so-called permits, signed by the Secretary of War, Assistant Secretary of War or acting Secretary of War, upon the dates therein indicated.

24. These defendants, and each of them, deny the allegations of said bill of complaint to the effect that all said documents mentioned in paragraph 23 of said bill of complaint are not nor never have been of any force or effect as constituting an authorization for the defendants, or either of them, to withdraw water from Lake Michigan; that the abstraction or diversion of water by the defendant, The Sanitary District, has obstructed or in any manner affected the navigable capacity of Lake Michigan, or any other navigable water of the United States; that the said abstraction or diversion has obstructed or in any manner affected the navigable capacity of the Chicago river by introducing a dangerously swift current, or any current obstructive or to any extent affecting navigation in and on said river.

These defendants further deny the allegations of said bill of complaint concerning the authority given by said Rivers and Harbors Act of March 3, 1899, to the Secretary of War relating to the approval and placing of structures or other works in or in such manner as to affect the navigable capacity of navigable waters of the United States.

These defendants, and each of them, further deny that at no time since the 31st day of March, 1903, or at any other time have the defendants, or either of them, been authorized by the Secretary of War to divert from Lake Michigan or to pass through the Chicago river, the Calumet river, or both into the canal of The Sanitary District more than 4,167 cubic feet of water per second; but, on the contrary, these defendants and each of them aver that the defendant, The Sanitary District of Chicago, has been and is now authorized to divert the amount of water required by The Sanitary District Act according to the population of said defendant.

These defendants further deny that the defendant, The Sanitary District of Chicago, has withdrawn within the last ten years, or at any other time, any water from Lake Michigan in violation of the permits of the Secretary of War above mentioned.

These defendants admit that the defendant, The Sanitary District of Chicago, has drawn and diverted through its diversion works during the period of ten years last past water in excess of 4,167 cubic feet per second.

These defendants further admit that since the 6th day of October, 1913, there has been pending in the District Court of the United States for the Northern District of Illinois, an action wherein the United States is plaintiff and The Sanitary District is defendant; that the object and purpose of said action is to restrain said defendant from diverting a greater amount of water from Lake Michigan than 4,167 cubic seconds feet; that on or about the 19th day of June, 1920, the judge of the District Court of the United States before whom the said cause was pending informally and orally announced that he would enter a decree granting the prayer of the United States and restraining the defendant from divert-

ing more than 4,167 cubic feet of water per second from Lake Michigan; that the judge who thus informally and orally announced his decision is no longer judge of said court. These defendants and each of them further aver as follows:

Immediately upon the said decision being announced the defendant, The Sanitary District of Chicago, by written motion, moved that the Court modify its oral announcement and that the Court direct the entry of a decree in such manner that the defendant, The Sanitary District, should only be enjoined and restrained from thereafter abstracting or withdrawing water from Lake Michigan in excess of 10,000 cubic seconds feet, on the condition that the defendant, The Sanitary District of Chicago, pay the United States the cost of constructing and maintaining compensating or regulating works to off-set for the alleged lowering of the surface elevation of the Great Lakes except Lake Superior, including their connecting channels, harbors, and other connecting navigable waters. Defendant Sanitary District pursuant to ordinance of its corporate authorities offered to pay said cost. The said motion, in addition to other defenses originally made, alleged that it is an admitted fact undisputed in the record in said cause that such compensating or regulating works could be constructed which would wholly and entirely off-set for any claimed lowering of lake surfaces; that the construction and operation of said works had been recommended by various commissions and boards appointed pursuant to Acts of Congress to study and report upon and make recommendations concerning diversions of water from the Great Lake System,—not only the diversion at Chicago, but also the various and numerous other diversions at other points and places upon the Great Lakes and their connecting waters. The said motion, partly heard,

was postponed for further argument and hearing. With the matter in this condition the judge who thus orally and informally made said announcement resigned about March 1, 1922, and thereafter has been no longer judge of said Court. The defendant, The Sanitary District, has been at all times since the presentation of said motion ready to proceed and finish the hearing thereon, and at no time has it asked for delay or for a continuance of any hearing upon said motion.

These defendants further aver as follows:

Substantially coincident with the passage of the Sanitary District Act of May 29, 1889, the General Assembly of Illinois passed a resolution stating the waterway policy and plans of the State, tying up to said waterway policy and plans, the said Sanitary District Act. This resolution also clearly shows that the State, in pursuing said policy and in passing said Sanitary District Act, assumed to act pursuant to the Act of Congress of March 2nd, 1827. Said resolution, passed May 28, 1889, is, in part, as follows:

> "WHEREAS, it is contemplated to increase the volume from Lake Michigan three hundred thousand cubic feet per minute within a few years, and ultimately to add six hundred thousand cubic feet, or more, thus enabling a large depth for navigation to be obtained by an improved channel, and that said channel will be self-sustaining and self-improving, and will discharge flood waters more readily, thus benefiting the bordering lands and increasing the healthfulness of the valleys, and
>
> WHEREAS, the works now projected by the City of Chicago form part of the waterway of large proportions from Lake Michigan via the DesPlaines and Illinois rivers to the Mississippi river, of which the dams and locks upon the alluvial section of the Illinois river can form no part, and which, if allowed to remain, will increase the overflow and will be detrimental to the Illinois valley, in the interest of the

State, therefore, be it resolved by the Senate and House of Representatives concurring herein:

(1) That it is the policy of the State of Illinois to procure the construction of a waterway of the greatest practical depth and usefulness for navigation from Lake Michigan via the DesPlaines and Illinois rivers to the Mississippi river, and to encourage the construction of feeders thereto in like proportions and usefulness."

The said resolution was included in the Chief of Engineer's Report to the Secretary of War, and the Secretary of War to Congress for said year 1889.

On or about April 21, 1891, The Board of Trustees of the Defendant, The Sanitary District, passed a resolution in regard to the use of the Chicago river. Certified copy of same was sent to the Secretary of War, which said resolution is in words and figures as follows, to-wit:

"Resolved that this Board hereby ordains that The Sanitary District of Chicago do, forthwith, enter upon, use, widen, deepen and improve the Chicago river from its mouth at Lake Michigan to the south branch thereof and also the south branch thereof together with the south and west forks thereof so as to make the same a proper and sufficient supply channel for the main channel heretofore surveyed from the Chicago river to Joliet and further, that the acting Chief Engineer be and he is hereby directed immediately to investigate and report upon the capacity of said river and its said south branch and forks for that purpose, and also as to any changes that should be made therein and that a copy of this resolution, certified by the clerk be, forthwith, transmitted to the mayor and common council of the City of Chicago and the Secretary of War of the United States."

It was then contemplated that the Sanitary District main channel would be opened about the year 1900; that the population of the metropolitan drainage area which

would be drained at that time by the main channel of The Sanitary District would be approximately 1,500,000 requiring a diversion of approximately 5,000 cubic seconds feet of water based upon the amount of water according to population as specified by The Sanitary District Act. Therefore, during the period of the construction of the main channel and in contemplation of its opening and operation the defendant, The Sanitary District of Chicago, made certain comparatively small improvements in the Chicago river, its south branch and west fork thereof by removing obstructions, and enlarging the channels, in order to accommodate temporarily the said flow through said rivers to the main channel. The said ordinance above quoted generally stated the plan and purpose of the defendant, The Sanitary District of Chicago, in connection with said Chicago river and its branches. The said improvements in said rivers made prior to the year 1900 were pursuant to permits and authority of the Secretary of War. The requests for said permits made by the defendant, The Sanitary District, stated the purpose for which said permits were desired—namely the enlargement of the channels to accommodate the flow of water required.

On or about June 16, 1896 The Sanitary District in writing requested the Secretary of War for permission to do work in the Chicago river necessary to this project. Among other things the request stated:

> "The work of The Sanitary District has progressed so far that it is now necessary for us to enter upon that which must be done in the Chicago river to make available the artificial channel which we have under construction from Robey street, Chicago, to Lockport in Will county, twenty-eight miles distant. Our connection with Lake Michigan must be through the Chicago river with the west fork of the south branch with which we make a junction at Robey street.

On or about June 24, 1896 the division engineer of the United States Army at Chicago reported to the Chief of Engineers upon the advisability of granting the permit to the Sanitary District. Among other things the report stated:

> "As far as the work itself is concerned there can be no objection to it, as in every case the navigation channel of the Chicago river will be improved and at this stage I am unable to do otherwise than to recommend the granting of the authority sought."

On or about July 3, 1896, the Acting Secretary of War granted the permission desired. Various other permits were granted pursuant to similar requests. At the time said channel was opened the defendant, The Sanitary District of Chicago, had expended on the improvement of the Chicago river and its branches for the purposes mentioned approximately $1,918,130.21. No sooner, however, had the channel of The Sanitary District been opened and water caused to pass through same from Lake Michigan by way of the Chicago river and its branches than it was ascertained that the narrowness and shallowness of the channels of said rivers were such that the current in said rivers obstructed navigation thereon. Thereupon the Secretary of War attempted to limit the diversion through the said Chicago river and its branches. Such limitations were made solely and entirely because of said current. The permits or documents referred to in Paragraph 23 of said bill of complaint except the one dated May 8, 1899 and the one dated June 30, 1910, show that such limitations were based upon that ground and upon no other.

On or about April 26, 1900 in order to obtain a permit for complete improvement of the Chicago river and its said branches so as to permit the withdrawal by means of The Sanitary District diversion works of 10,000 cubic

seconds feet of water, The Sanitary District of Chicago made of the Secretary of War the following request:

"THE SANITARY DISTRICT OF CHICAGO

Security Building
Chicago, April 26, 1900.

To the Honorable
The Secretary of War.

Sir:

The Sanitary District of Chicago, a municipal corporation organized and existing under the laws of the State of Illinois, respectfully represents that, by the laws of the State of Illinois and the charter of this petitioner, it is authorized to enter upon, widen, deepen and otherwise improve any navigable stream, river or other water-way. That in pursuance of the power conferred upon it by the statutes of the State of Illinois, and in the performance of the duties enjoined upon it by the act of the Legislature authorizing its creation, and under which it is acting, it has been determined to improve the Chicago river by widening and deepening the same and to the end that such action on the part of your petitioner may be conformable to law and the statutes of the United States in that behalf, it hereby makes application for permission to make the changes, alterations and improvements in said Chicago river from or near Lake street in the City of Chicago to or near Ashland avenue in the City of Chicago, said work to conform to the plan and specifications as follows:

(*a*) A map herewith exhibits the existing boundaries of that part of the south branch of the Chicago river which it purposes and desires to improve.

(*b*) The work to be done contemplates widening the river to a width of two hundred (200) feet between dock lines, except in so far as bridge abutments may project into the stream outside of the new dock lines; said widening in all cases to be made with a view of improving the navigability of the stream.

(*c*) The work to be so done as to ultimately permit excavation of the river bed to a depth of thirty (30) feet below water surface throughout the central portion of the stream.

(*d*) The widening of the river is to be so disposed that the effect will be to produce a straighter channel than now exists and, furthermore, to result in a continuous dock line having straighter alignment and being better disposed for navigation than the docks which now exist.

(*e*) The work to be done is to be prosecuted progressively as to time. The rate of progress being limited by the rapidity with which right of way may be acquired and the resources for the execution of the work to be made available. The modification and alteration of said river as above indicated will greatly benefit navigation in said river. Your petitioner, therefore, respectfully requests that the plan of improvement as above outlined be approved by you.

Awaiting as early a reply as practicable under the circumstances, your petitioner has the honor to be,

Very respectfully yours,
THE SANITARY DISTRICT OF CHICAGO,
By WILLIAM BOLDENWECK,
President.

Attest:
JOSEPH F. HAAS,
Clerk."

In connection with the same project on or about June 7, 1900, the defendant, The Sanitary District of Chicago made of the Secretary of War the following request:

"Chicago, June 7, 1900.

To the Honorable,
The Secretary of War.

Sir:

Under date of April 26, 1900, the Sanitary District of Chicago had the honor to address a com-

munication to you containing an outline of the proposed improvement of a portion of the south branch of the Chicago river. Accompanying the letter was a map showing the location of the south branch of the Chicago river, the bridges spanning said river and, also the width of the stream along the entire course of the south branch of the river. Since that date The Sanitary District of Chicago passed an ordinance for the improvement of the south branch of the Chicago river from the south line of Twelfth street to the east line of Ashland Avenue, so as to make said south branch, between the lines aforesaid, of a uniform width of two hundred (200) feet; the work to be done so as to ultimately permit excavation of the river bed to a depth of thirty (30) feet below water surface throughout the central portion of said stream, in accordance with the plans adopted by the Board of Trustees of The Sanitary District of Chicago, a copy of which plans is hereto annexed. The ordinance referred to being marked Exhibit 'A' with this letter; and the maps showing the plans of the proposed improvement being marked Exhibit 'B.' The maps are in two sections, known respectively as No. 2 and No. 3.

The Sanitary District of Chicago is a municipal corporation, organized and existing under the laws of the State of Illinois and by the laws of said State and the charter of said Sanitary District, it is authorized to enter upon, deepen, widen and otherwise improve any navigable stream, river or other water-way; and that in pursuance of the power conferred upon it by the statutes of the State of Illinois and in performance of the duties enjoined upon it by the act of the Legislature authorizing its creation, and under which it is acting, it determined upon said plans outlined in the enclosed ordinance and further illustrated by the maps hereto annexed; and the said Sanitary District in compliance with the Statutes of the United States, hereby makes application to you for permission to make the changes, alterations and improvements in said south branch of the Chicago river, from the south line of Twelfth street to the east line of Ashland avenue.

Awaiting as early a reply as practicable under the

the circumstances, your petitioner has the honor to be,

Very respectfully yours,
THE SANITARY DISTRICT OF CHICAGO,
By WM. BOLDENWECK,
President.

Attest:
JOSEPH F. HAAS, *Clerk.*"

The maps mentioned in said requests for permits are, for convenience, attached at the end of the appendix to this Answer, and are made a part hereof.

On July 11, 1900 two permits were issued pursuant to said requests of April 26th and June 7th, 1900, respectively. Pursuant to said permits of July 11, 1900, The Sanitary District proceeded to draw detailed plans for the said improvement of the channel of the Chicago river and the channels of its branches mentioned, whereby said channels would be deepened at all points to 26 feet and widened at all points to not less than 200 feet, straightened, and old and obstructive center pier bridges replaced with new modern bascule bridges, leaving the river channel free for the flow of water and navigation. All these improvements permit and allow the diversion through The Sanitary District diversion works of not less than 10,000 cubic seconds feet with a current not obstructive to navigation and not exceeding a mile and a quarter per hour. The said plans were approved by the Secretary of War on or about January 17, 1902, and The Sanitary District thereupon entered upon the work required to complete said Chicago river improvement project. The work proceeded from time to time so that the project is now completed and has been so completed for a number of years last past, and the defendant, The Sanitary District, expended in the making of said improvement of the Chicago river and the channels of its branches mentioned, upwards of $13,000,000. Said im-

provement in said rivers has had the effect of eliminating any and all current obstructive to navigation and of permitting a withdrawal of water required by The Sanitary District Act according to the population of the District through said rivers so that the current has not, does and will not exceed one and a quarter miles per hour, and said current is not obstructive to navigation on the said rivers. Congress has directly authorized said diversion of water and the operation of the Sanitary District works for the purposes mentioned by said Act of March 2, 1827, and by resolution passed April 21, 1904, to permit the lowering of the crest of the government dams in the Illinois river at Kampsville and LaGrange, which said resolution is in part as follows:

> "The Secretary of War is authorized to permit The Sanitary District of Chicago at the expense of said corporation to lower the crest of the government dams in the Illinois river at Kampsville and LaGrange."

Said dams at Kampsville and LaGrange were government dams and had been constructed prior to the opening of said main channel. The increase in the flow of the Illinois river at the said dams by reason of the then diversion and the enlarging diversion as the population of The Sanitary District increased would raise the elevation of water in the Illinois river at and above said dams to an extent which might cause overflow or damage to lands. In order to eliminate such conditions Congress authorized the lowering of the dams, thus removing obstructions to the continuance of the diversion from Lake Michigan.

The said permit of May 8, 1899, authorized the opening and operation of the channel of the defendant, The Sanitary District with no limitation as to the amount of flow or diversion. The material conditions of said per-

mit were and are that (1) If Congress should act, then of course, the permit should be of no further force or effect, and (2) that the Secretary of War might limit the flow or withdrawal of water if a current were created in the Chicago river unreasonably obstructive of navigation. Prior to said improvement of the Chicago river and its branches, made subsequent to the opening of said main channel, the Secretary of War did from time to time change and limit the diversion solely and only because of the current in the Chicago river. The improvement of the Chicago river and its branches by The Sanitary District at an expense of upwards of $13,000,000 was made for the purpose of eliminating this objection. The cause of the limitation or objection having been removed, the limitation thus ceased to have any effect, and said permit of May 8, 1899 has now its full force as if there were no conditions thereto except the one having reference to Congressional action in the premises.

In 1895 a Commission of Engineers appointed by the Secretary of War, of which Commission General O. M. Poe was Chairman, made a report to the Secretary of War, in substance, that it was the opinion of said Commission that the withdrawal of ten thousand cubic seconds feet of water from Lake Michigan, through the Sanitary District Canal, then under construction, would have the effect of lowering the surface elevations of Lakes Michigan, Huron, Erie and Ontario approximately six inches. The Secretary of War had before him the said report at the time the permit of May 8, 1899 was granted.

The Sanitary District is fully and completely authorized and empowered by the United States, through Acts of Congress and in addition by permission of the Secretary of War pursuant to Congressional acts, to use the Chicago river in the manner that it has been, and is using

it to divert the amount of water from Lake Michigan required by The Sanitary District Act to the capacity of its diversion works,—namely, 10,000 cubic seconds feet.

25. These defendants, and each of them, deny the allegation of said bill of complaint to the effect that the alleged acts of the defendants, or either one of them, in diverting water from Lake Michigan into the canal of the defendant District, have never been authorized by Congress and are in violation of the legal rights of the complainant and the people thereof. On the contrary, these defendants and each of them aver that the said diversion has been authorized by Congress and is legal and proper. These defendants further deny that they, or either of them are in any manner, or by any acts interfering, or have been or will interfere with the common law right, or any other right of the said complainant and its people, to have the free and unobstructed use of Lake Michigan and the various ports and harbors thereof within the borders of said State, for purposes of navigation, trade and commerce, or for any other purpose, free from any and all interference with the natural navigable capacity of said lake or said harbors. On the contrary, these defendants, and each of them aver that said alleged acts of said defendants have not in any manner affected the common law right or any other right of the State of Wisconsin, or its people, to the natural navigable capacity of said harbors and said lakes.

These defendants further deny that they, or either of them, in any manner or by any acts have or will interfere with the right of the people of Wisconsin to the free and unobstructed navigation of Lakes Michigan, Huron, Erie and Ontario, and the navigable waters between the said lakes and from said lakes into the Mississippi river and the Atlantic ocean; that these defendants, or either of them are interfering with, or are affecting any rights, if

any there be, belonging to said people of Wisconsin by common law or by the ordinance for the government of the Territory of the United States northwest of the River Ohio, of June 13, 1787. These defendants, and each of them deny that by any acts herein alleged, or otherwise they or either of them violated or are violating the provisions of the Act of Congress of March 3, 1899, known as the Rivers and Harbors Act of said date, or of any other acts of Congress, or of any provisions or sections of said Act.

26. These defendants further deny that they, or either of them, by any acts herein alleged, or by any other acts, have caused, are causing or will cause serious or any interference with the trade and commerce of the people of Wisconsin, or of the State of Wisconsin in its proprietary capacity; that these defendants, or either one of them, by any acts whatsoever have caused, are causing or will cause pecuniary or any other loss to the people of Wisconsin, or to the said state.

27. These defendants, and each of them, further aver and state, as follows:

(a) The diversion works of the defendant, The Sanitary District of Chicago, are so constructed as to provide ultimately for the diversion direct from Lake Michigan through the Chicago river to its confluence with the north and south branches of said river, of six thousand cubic feet of water per second. Said diversion is or may be augmented there, as it enters the south branch of the Chicago river, by two thousand cubic feet of water per second, diverted from Lake Michigan by way of the Lawrence avenue pumping station and intake from Lake Michigan, and also through the Wilmette, Illinois, pumping station at the northern terminus of the north shore channel, running from Lake Michigan at said Wilmette to the north branch of the Chicago river. Thus there is

or is to be drawn through the south branch of the Chicago river approximately eight thousand cubic seconds feet of water, which is or is to be further augmented by approximately two thousand cubic seconds feet of water entering the said south branch by way of the south fork of said south branch. Said two thousand cubic seconds feet is drawn from Lake Michigan by the Thirty-ninth street pumping station and fresh water intake. From said point approximately ten thousand cubic seconds feet of water will flow through said south branch to the said west fork and thence to the northern terminus of said main channel. The Calumet-Sag Channel, an adjunct of the main channel, runs from the Little Calumet river at Blue Island, Illinois, to the main channel of the Sanitary District at Sag, Illinois, and is constructed to a maximum capacity of flow and withdrawal of two thousand cubic seconds feet of water which may be diverted from Lake Michigan by way of the Calumet and Little Calumet rivers. As ten thousand cubic seconds feet is the maximum diversion contemplated and provided, the Calumet-Sag Channel is designed to, and may be used from time to time to relieve or lessen the amount of direct diversions through the Chicago river and its branches, as conditions may require; and said Calumet-Sag channel will thus take care of the volume of water indirectly reaching said outlets, which water is taken from Lake Michigan by means of cribs and intakes hereafter described and used for drinking, potable and domestic purposes. Said diversion works are so constructed that the amount of diversion from any or all sources is or may be controlled. The locations of the various diversion works, above mentioned, are shown upon said map attached as Exhibit "B" hereto.

The waters of Lake Michigan uncontaminated by sewage pollution furnish an excellent, pure and only drink-

ing, potable and domestic water supply for the people of Chicago and its suburbs and surrounding communities. Said water is withdrawn from Lake Michigan by means of a number of intakes located in Lake Michigan, three to four miles from the shore line. Such intakes are known as and called cribs. The water is conveyed from said cribs by means of conduits located beneath the bottom of Lake Michigan to pumping stations on the shore opposite the respective cribs. The water is thus pumped into water mains conveying water to homes, residences, industrial and other places, consuming fresh and pure water. The volume of water thus pumped and furnished to the people of Chicago and its surrounding communities for said purposes is approximately 1,000 cubic feet of water per second.

(b) The said diversion works constructed, completed and in operation by the defendant, The Sanitary District of Chicago, together with the improvements heretofore described and made upon the Chicago river and its branches, provide a complete and comprehensive system by which an outlet has been and is provided for the sewage and drainage accumulating in the metropolitan district comprised within the limits of The Sanitary District of Chicago, and said works were, and are necessary to preserve the health of the people within said territory and to protect their lives. Comprised within the boundaries of said defendant, The Sanitary District, as shown by said map, Exhibit "B," is located the great city of Chicago, Illinois, with its various suburbs, including the cities, towns and villages of Evanston, Glencoe, Winnetka, Wilmette, Shermerville, Glenview, Morton Grove, Niles, Cicero, Stickney, Evergreen Park, Morgan Park, Blue Island, Riverdale, Oak Park, Berwyn, Forest Park, River Forest, Maywood, Riverside, Brookfield, Bellwood, Franklin Park, Melrose Park, River Grove, Dolton, Har-

vey, West Hammond, Worth, Bremen and Calumet. The population within the limits of said Sanitary District of Chicago is now approximately three million.

At the time the said defendant, The Sanitary District's main channel was opened and placed in operation, January 17, 1900, and for a number of years prior thereto, the annual death rate from typhoid fever, per one hundred thousand population in the City of Chicago, was approximately seventy-five. At times said City of Chicago was devastated by epidemics of typhoid fever. Since the opening of said channel the annual death rate from typhoid fever, per one hundred thousand population, has steadily decreased with no epidemics, until the present time the death rate from typhoid fever for the year 1921, for the City of Chicago, per one hundred thousand population, was approximately one and seven one-hundredths, and similar conditions exist in its suburbs. The death rate from typhoid fever, per one hundred thousand population, for the City of Chicago, for the year 1920, was next to the lowest of any city in the United States of a population of one hundred thousand or over, said death rate for Chicago, being one and one-tenth per one hundred thousand, and the death rate at Rochester, New York, one per one hundred thousand. Said death rate for said year from typhoid fever, per one hundred thousand, was very much lower than any city located on the Great Lakes, or their connecting waters. The death rate from typhoid fever furnishes a criterion by which the health of a community may be determined, and it is estimated that where there is a decrease in the death rate of one, per one hundred thousand of population, from typhoid fever, there is also a corresponding decrease of three, per one hundred thousand, from other diseases. The said plan or method so long followed by the people of Chicago and its surrounding communities, and by these defendants, for

the protection of the only water supply for said people, and to dispose of the sewage and drainage arising in said metropolitan drainage area was the only method or plan that could have been adopted to effectively accomplish said purpose. Since said time when the Sanitary District Act was passed, said plan or method has been the only method which would effectively and completely accomplish said purpose, and said works of the defendant, The Sanitary District, above described and operated by it, have effectively accomplished the purpose for which they were primarily constructed, namely—the protection of said water supply and furnishing an outlet for said sewage and drainage.

(c) The United States has not only, as heretofore shown, expressly by congressional act, or acts, authorized the construction of said works, but it has also invited and acquiesced in their construction and operation. The said channels and works of the Sanitary District are so constructed that they may be navigated by boats and other watercraft, and the Sanitary District Act, and acts amendatory thereof, and supplementary thereto, provide that boats navigating the Illinois and Michigan Canal shall be permitted to use the channels of the Sanitary District free and without charge. The right-of-way along the main channel of the Sanitary District reserved and now being used for the locations of industrial and manufacturing plants requiring or desiring water communication, is accessible to the largest boats navigating the Great Lakes passing through the Chicago river and its branches to the main channel and to such plants. When the Desplaines and Illinois rivers are further improved for navigation, such boats may pass from said main channel along said rivers to the Mississippi and Gulf of Mexico. The said channels of the Sanitary District and the said Chicago river and its branches, so enlarged by deep-

ening and widening same by the Sanitary District, as hereinbefore stated, form a complete system of internal waterways and an extensive inner harbor for the vast population and numerous industries located within said metropolitan district, the population of which equals almost one-half of that of the entire State of Illinois and is nearly equal to the combined population of all the other cities, towns and villages located upon the shores of the Great Lakes and their appurtenant waters. The navigation facilities provided, as above set forth, were in accordance with the policy for improvement of navigation, and such facilities, as expressed by said reports of Government Engineers made pursuant to Congressional acts and as indicated by the various acts of Congress under which said reports were made.

On or about December 14th, 1909, the United States caused suit to be instituted in its name against the Economy Light & Power Company in the Circuit Court of the United States, Northern District of Illinois, Eastern Division, to enjoin the defendant, Economy Light & Power Company, from constructing a dam in the Desplaines river to develop water power. In said suit, and by said bill of complaint, the United States recognized the right of the defendant, Sanitary District, to divert water from Lake Michigan provided for by said Sanitary District Act. In said bill of complaint it was alleged:

> "That in connection with the construction of said Sanitary District Canal, and in creating the system of waterways resulting from the construction of said canal, said State of Illinois has caused the quantity of water flowing through the said Desplaines river below the point at which it connects with said canal to be largely increased, and that said portion of said river has been continuously since the opening of said canal, and is now, water navigable in fact and a part of the navigable waters of the United States and subject to the jurisdiction and control of the federal government. * * *

That in connection with and as a result of the construction of said Sanitary District Canal and the diversion of said water from Lake Michigan, said Sanitary District of Chicago, acting under authority of said State of Illinois, has largely increased the navigability of said Desplaines river and that continuously since the opening of said canal there has been, and is, in said portion of said Desplaines river below the point at which it connects with said canal, a body of water navigable in fact and which, by virtue of its connection with other navigable waters is to be deemed a part of the navigable waters of the United States and subject to the jurisdiction and control of said United States."

The said cause was tried and the United States obtained a decree in said Court restraining and enjoining the defendant therein, Economy Light & Power Company from constructing said dam and said decree was affirmed by the Circuit Court of Appeals for the Seventh Circuit, and by this Court. The United States sustained in said suit the position thus taken, as above alleged.

On or about January 11th, 1909, the United States and Great Britain concluded a treaty known as the Boundary Waters Treaty, which related to the uses of the waters of the Great Lakes system along the international boundary. Said treaty established that the order of use of said waters should be:

(1) Uses for domestic and sanitary purposes.

(2) Uses for navigation, including service of canals for purpose of navigation.

(3) Uses for power and irrigation purposes.

The said treaty also expressly recognized, as valid, existing diversions, of which the Sanitary District diversion was one, to the amount as provided by the Sanitary District Act as the population of Chicago should increase, so that ultimately there would be required to be diverted, under said Sanitary District Act, the maximum of ten

thousand cubic seconds feet of water. The said Act also specified the maximum amount of diversions that should be allowed from the Niagara river, at Niagara Falls, on the Canadian side of the boundary, and also upon the American side. The maximum was fixed for Canada at thirty-six thousand cubic seconds feet of water for power purposes and that for the United States was fixed at twenty thousand cubic seconds feet of water. The said twenty thousand cubic seconds feet diversion on the American side was arrived at by considering that ten thousand cubic seconds feet of water was diverted by the United States at Chicago. The reports of the International Waterways Commission, organized pursuant to the joint acts of Congress and the Parliament of the Dominion of Canada, upon which said treaty was based, so state this to be a fact. Likewise, the representations of the State Department to the Senate of the United States in connection with the confirmation of said treaty so specified.

(d) There are many diversions of the Great Lakes system of waterways, and particularly from Lake Erie. The United States, in addition to its exclusive jurisdiction over said navigable waters has expressly assumed jurisdiction of diversions by legislative acts as well as by acts of executive officers. On or about June 30, 1917, Congress, by resolution, provided for a complete survey and report to be made to it upon the diversions of waters from the Great Lakes for all purposes, and a report has been made pursuant to said resolution after investigations by engineers and officers of the United States army, extending over a period of upwards of two and one-half years.

By said report pursuant to said resolution of June 30, 1917, and by other reports made pursuant to Acts of Congress, the engineer officers of the United States

Army have found that it is feasible to construct compensating works in the St. Clair, Detroit and Niagara rivers, to offset for the claimed lowering of the surface elevations of said lakes due to said diversion of water at Chicago, and have recommended that such compensating works be constructed.

If said diversion of water from Lake Michigan has or will lower to the amount claimed, the levels of either or all of the waters of Lake Michigan, Lake Huron, Lake St. Clair, Lake Erie, Lake Ontario, Sault Ste. Marie, St. Mary's river, St. Clair river, Detroit river, Niagara river, and St. Lawrence river, and of all or any of the harbors, channels, canals or rivers connected therewith, it is feasible and practicable to compensate for the lowering of such levels by the building of proper works in either the St. Clair river, Detroit river, Niagara river, St. Lawrence river or of all of them. The cost of constructing and maintaining such compensating or regulating works will be small in comparison with the value and cost of the Sanitary District Works, above described, for the protection of said water supply. The defendant, The Sanitary District of Chicago, does hereby offer to defray the expense of constructing and maintaining compensating works to off-set for the claimed lowering due to said diversion by the Sanitary District, and heretofore, by ordinance of its corporate authorities it has provided for and assumed said obligation.

(e) Said Desplaines and Illinois rivers have become by virtue of the operation of the said defendant, Sanitary District's works, comparatively clear and wholesome, which rivers, prior to the opening of said main channel, were sluggish, slow-moving streams, badly polluted by sewage discharged by the City of Chicago and by many towns situated along said Illinois river. By virtue of said diversion of water to said Illinois river,

fish life in said Illinois river has increased rapidly and it has become more healthful to the people living thereon.

If an injunction were granted by this Court, as prayed by the said bill of complaint, and the diversion of water from Lake Michigan were wholly cut off and restrained, or limited to the amount of 4,167 cubic feet per second, or any amount substantially less than that required by the said Sanitary District Act, the only water supply for the people of the Sanitary District would become polluted and rendered injurious and unfit for use, and the people of the Sanitary District would be without the ability to obtain a proper and healthful water supply. Such pollution would exist at times of heavy rains upon the Chicago river drainage area, causing a large amount of water to flow in said Chicago river and its branches, into Lake Michigan, carrying with it the sewage and drainage contained in the sewers within the limits of the Sanitary District. All this would cause a return to the unhealthy conditions in Chicago as such conditions existed prior to the opening of said main channel and accentuated now by the present vastly greater population. The flood flow of said Chicago river is 10,000 cubic seconds feet and a diversion limited to less than said amount would permit said river to flow into Lake Michigan at such times. Also, if the said flow were entirely restrained, or limited, as aforesaid, there would not be water with which to digest, dilute or oxidize the sewage, as it would be discharged into the Desplaines and Illinois rivers. The Desplaines and Illinois rivers would become polluted, the ozygen content of the waters would be entirely eliminated and a septic condition would exist in the Desplaines and Illinois rivers along the entire course of said rivers, producing re-

sults unhealthful to the people along said rivers and wholly destroying fish life therein.

(f) The so-called artificial sewage disposal works that would be made necessary to construct, if said injunction were granted, and thereby the flow or diversion of water through the main channel of the Sanitary District were limited to 4,167 cubic feet per second, or any amount of water substantially less than the amount required by the Sanitary District Act, or said flow or diversion were entirely prevented, would be inadequate, ineffective and impracticable to provide for the disposition of sewage of the said Sanitary District.

(g) The City of Chicago constitutes one of the greatest railroad and industrial centers of the United States. It is visited each year by a vast number of persons residing in other parts of the United States and the world. Many of such persons are required to come to Chicago and remain for various lengths of time in order to transact business. Others visit said city for pleasure and recreation. The health conditions of Chicago are, therefore, of great importance not only to the people of Chicago and those residing in its immediate vicinity, but generally to the people of the United States.

28. These defendants, and each of them, further aver as follows:

(a) The cutting through the Continental Divide by means of the canal to withdraw water from Lake Michigan and emptying same into the Desplaines and Illinois rivers, pursuant to said Act of Congress of March 2nd, 1827, and other acts herein in this answer mentioned, and pursuant to the invitation and acquiescence of the United States, and the use of such waters for sanitary purposes in order to furnish an outlet for the drainage of Chicago and its environs, and surrounding territory,

thus protecting the water supply of the people within said area, has been during all of said period well known to people residing throughout the United States, and particularly to those people residing within the states bordering upon the Great Lakes, including Wisconsin, and in the vicinity thereof. At the time the Sanitary District's main channel was being projected and was being constructed, it was known as a great engineering feat. The method to be used in its construction and the purpose to be thereby accomplished, namely,—the diversion of a large quantity of water from the St. Lawrence river to the Mississippi river—received great publicity in the great newspapers published in the city of Chicago, circulated to a large extent in the State of Wisconsin, and in other cities throughout the country. The facts with reference to the construction of said canal and the purpose thereof were also published at various times during said period of construction by newspapers published in and circulated from the great cities of Milwaukee, La Crosse, Madison, Janesville, Superior, Ashland, Manitowoc, Sheboygan, Kenosha, Racine, Eau Claire, Fond du Lac, Oshkosh, Menasha, Fort Atkinson and Neenah, located in Wisconsin, as well as other cities thereof. The people residing within the territorial limits of complainant, and the members of its legislature, its governor, attorney general and other executive officers knew and had the opportunity to know of the construction and purpose of said works, namely, the diversion of water from the Great Lakes. Congress was notified by the Secretary of War of the passage of the Act of May 29th, 1889, called the Sanitary District Act, and of the progress of construction of said main channel by the annual reports of said chief of engineers of the United States army, hereinbefore mentioned.

(b) On or about December 30th, 1907, suit was instituted on the relation of Charles S. Deneen, Governor of the State of Illinois, and William H. Stead, its Attorney General, in the name of the People of the State of Illinois against the Economy Light & Power Company, in the Circuit Court of Grundy County, to enjoin the construction by the Economy Light & Power Company of the dam across said Desplaines river for the purpose of creating electrical energy by water power. In the said suit, evidence was produced as to the use of the water route in early times, hereinbefore described, from Lake Michigan along the Chicago River and its south branch and west fork, and said portage to the Desplaines and Illinois rivers; as to the construction of the Illinois and Michigan Canal, its uses for navigation, as well as for sanitary purposes, as herein described; and as to the construction, operation and use of the main channel of The Sanitary District and the diversion of water therefor, as hereinbefore mentioned. A decree was entered in said Circuit Court of Grundy County and an appeal was taken therefrom to the Supreme Court of Illinois. The transcript and abstract of record were filed in the Supreme Court of Illinois on or about December 30, 1908. On or about April 13, 1909 the Attorney General of Wisconsin filed, in said court, a petition to intervene as a party to said cause, in which petition various facts with reference to said litigation were alleged, and said Attorney General of Wisconsin then knew of the proceedings and said evidence and facts produced in the record in said cause instituted in said Circuit Court of Grundy County.

(c) Complainant, during all of said period when said canal was being constructed, while The Sanitary District of Chicago was improving the Chicago river, and constructing the various intercepting sewers and ad-

juncts to the main channel at a cost to it of about ninety million dollars, as heretofore alleged, made no protest or objection to the construction of said works, or to the operation of same, and made no protest or objection to the diversion of water from Lake Michigan for the purposes mentioned. Said complainant remained thus quiescent notwithstanding the knowledge by the said complainant of the provisions made by the State of Illinois pursuant to said acts of Congress for the construction of a canal across the Continental Divide for navigation purposes, and the use of same for sanitary purposes, pursuant to various acts and resolutions of the General Assembly of Illinois, and the said Act of May 29, 1889, known as The Sanitary District Act, and notwithstanding also the knowledge by it of the vast expenditures of money made by The Sanitary District, in the construction of the various works herein mentioned, for the purpose of furnishing an outlet for the sewage and drainage of said territory, and in connection therewith the diversion of water from Lake Michigan to the amount herein mentioned.

(d) When Wisconsin was admitted to the Union as a state in 1848, she entered said Union subject to any and all rights granted by said acts of Congress of March 30, 1822, and March 2, 1827, and the action and rights of the State of Illinois thereunder. The complainant has acquiesced in the said diversion of water from Lake Michigan, contemplated and made necessary by the construction of said works, in the construction of said works herein described and in the expenditure of moneys necessary to be expended to provide said works and to make possible the diversion mentioned, and therefore complainant is estopped from maintaining this suit. Wherefore, these defendants, and each of them, move that the

said suit be dismissed because of said laches, acquiescence and estoppel.

29. These defendants, and each of them aver that pursuant to said Acts of Congress hereinabove mentioned, and to said waterway policy of the State of Illinois as expressed by resolutions and acts of its General Assembly, said General Assembly passed an Act entitled;

> "An Act in relation to the construction, operation and maintenance of a deep waterway from the water power plant of The Sanitary District of Chicago at or near Lockport, Illinois, to a point in the Illinois river at or near Utica, and for the development and utilization of the water power thereof;" approved June 17, 1919; in force July 1, 1919;

that under said Act the waterway to be constructed is to be known and called "The Illinois Waterway"; that said Act provided for the route of the said waterway, as stated in the title thereof, from the southern terminus of the main channel of The Sanitary District of Chicago at or near Lockport along the Desplaines and the Illinois rivers to Utica on said latter named river; that the channel of the waterway is to be according to said Act not less than 150 feet bottom width and the minimum depth not less than 8 feet in the earth sections and 10 feet in the rock sections; that the minimum depth over mitre sills not less than 14 feet and minimum width of locks is to be not less than 110 feet with minimum length not less than 600 feet useable length; that the purpose of making the depth over mitre sills not less than the depth provided and the length and width of locks as stated, was to permit of the enlargement of said waterway to a 14 foot depth; that the diversion of water from Lake Michigan to the amount provided for by said Sanitary District Act will enable the said waterway to be constructed at less cost and to be operated with less annual expense; that said diversion to said amount will

permit of the extension of said waterway from Utica on said Illinois river to its mouth, and thence along the Mississippi river to Cairo, Illinois, by the United States Government in conjunction with said Illinois waterway construction at less expense and less cost, and will permit of its operation at less annual expense; that such reduction in cost of construction and in annual operation expense by virtue of the use of said waters diverted from Lake Michigan in the amount mentioned will amount to a large sum of money; that in addition the use of said waters so diverted will permit of the removal of the state dams at Henry and Copperas Creek on the Illinois river and the government dams at Kampsville and LaGrange on the Ilinois river, thus permitting navigation on said Illinois river from Utica to its mouth to be free and unobstructed by locks or dams.

30. These defendants further aver that the improvements made by the United States of said harbors mentioned in said bill of complaint, as located on the shore of Lake Michigan in Wisconsin, and on the shore of Lake Superior in Wisconsin, the original depth of water, the project depth as provided by the United States, and the present depth of water in said harbors, and other facts relating thereto are as follows:

Marinette Harbor.

Marinette, Wisconsin, is located across the Menominee river from Menominee, Michigan. Both cities, industrial plants and persons, firms and corporations desiring water communication or transportation use the Menominee river as their inner harbor. This river discharges into Green Bay, about sixteen miles northwesterly from the mouth of Sturgeon Bay. The river is navigable only to a dam about two miles above its mouth.

It is this portion that forms said inner or commercial harbor for said two cities. The United States has improved the inner harbor as well as the outer harbor by various works. Originally, the outer harbor and the Menominee river were shallow, the depth of water therein being only a few feet. The first improvements made by the United States were conducted separately as to Menominee Harbor and Menominee river. The original project for the harbor was provided by the Act of Congress of March 3, 1871. Under this Act two parallel piers four hundred feet apart were constructed and a channel thirteen feet deep was provided. The Act of Congress of September 19, 1890 increased said depth to fifteen feet, and the Act of March 3, 1899 increased it to eighteen feet. The Act of Congress of September 19, 1890, as modified by the Act of July 13, 1892, and by the Act of June 3, 1896, provided for a project depth of channel of fifteen feet, with a turning basin at the upper end of said commercial harbor. By the Act of Congress of June 13, 1902, the improvement of the harbor and river was consolidated, and by the Act of March 4, 1913 the said harbor was improved to an eighteen-foot depth, including also a large portion of the inner harbor. The project depth of water, as provided by the acts of Congress for both the harbor and the river, so far as it is navigated, was and is eighteen feet, which depth has been and is maintained. The total amount expended by the United States in the improvement of said harbor and river, to and including the year 1920, is the sum of approximately $499,320. Since the opening of The Sanitary District channel, January 17, 1900, there was expended in the improvement and maintenance of said harbor and river approximately the sum of $174,670.

Green Bay Harbor.

Said harbor comprises the Fox river, below DePere, Wisconsin, a section about six and one-half miles long, discharging into the southern end of Green Bay, about one mile below the City of Green Bay, and an entrance channel about four and one-half miles long dredged through the shoals in the head of the bay from the river mouth to nineteen feet depth in Lake Michigan. In the river, the lower three miles, extending through the City of Green Bay, is a naturally deep pool, requiring no improvement, and the upper three and one-half miles, thence to DePere is a dredged channel connecting at its head with a turning basin at DePere. Originally, and before the United States made improvements in this harbor, Green Bay was narrow and tortuous, with an available depth of about ten feet, and the entrance was blocked by Grassy Island situated about one and one-half miles out from the river mouth. The improvement was begun by the United States under a plan adopted by the Act of Congress of June 23, 1866. This Act provided for dredging an outer channel eleven feet deep, including a cut with revetted sides through Grassy Island. This project depth was increased by the Act of Congress of June 23, 1874, to thirteen feet, and by the Act of Congress of July 13, 1892 to fifteen feet. The latter Act also adopted a project for the inner channel for a depth of eleven feet, which was increased by the Act of Congress of June 3, 1896 to fifteen feet. This work was completed in 1899. The Act of Congress of June 13, 1902, provided for the maintenance of the existing works and the fifteen foot channel in Fox river below DePere, and for a channel eighteen feet deep from the mouth of Fox river to that depth in Green Bay. The Act of Congress of June 25, 1910, provided for a turn-

ing basin at the upper end of the river channel at De-Pere to be fifteen feet deep and of sufficient area to permit vessels not exceeding three hundred and fifty feet in length to turn readily without the assistance of a tug. All this work was completed about the year 1910 and has been maintained to the project depths above mentioned and the actual depth of water has been and is the amount provided for by said improvement projects. The total expenditure made by the United States in the improvements above mentioned of the said harbor, to and including the year 1920, is approximately the sum of $689,078.39, of which amount $301,028.39 has been expended since the date of the opening of The Sanitary District main channel.

Sturgeon Bay Harbor.

Originally, and before the United States commenced improving this harbor, navigation was controlled by a depth of water of about eight feet over a shoal guarding the entrance to the harbor. Sturgeon Bay is entered by means of the Sturgeon Bay and Lake Michigan Ship Canal. This canal is a revetted canal connecting Lake Michigan and Sturgeon Bay. A basin having an area of about twelve acres enclosed by break waters is located at the Lake Michigan end of the canal, and there is a dredged channel connecting the western end of the canal with deep water in Sturgeon Bay. The canal and connecting channel form a thorough waterway from Lake Michigan to Green Bay, Sturgeon Bay being an arm of the latter, and said canal thereby shortens the distance of vessels plying between Green Bay ports and those on the shores of Lake Michigan to the southward. The port and City of Sturgeon Bay is located on both sides of the bay about four miles

northwesterly from the canal, the population of said city being about four thousand five hundred.

By an Act of Congress of April 10, 1866, two hundred thousand acres of public lands of the United States were granted to the State of Wisconsin for the purpose of aiding said State in constructing and completing a breakwater and harbor and a ship canal connecting the waters of Green Bay with the waters of Lake Michigan. Sturgeon Bay and Lake Michigan Ship Canal and Harbor Company, organized pursuant to acts of the legislature of Wisconsin, between 1872 and 1881, constructed a canal without locks or gates seven thousand two hundred feet long and one hundred feet wide at water surface and fourteen feet deep below mean level, and in continuation of the canal, dredged a channel in Sturgeon Bay six thousand one hundred feet long of about the same dimensions as the canal. Works constituting what is known as a harbor of refuge at the Lake Michigan entrance to the canal were constructed by the United States. The River and Harbors Act of Congress of July 13, 1892 provided for the acquisition of the canal by the United States, pursuant to which the United States assumed control on or about April 25, 1893, and the United States paid for said canal and works the sum of approximately $81,333. By the Act of Congress of June 13, 1902, the canal and harbor of refuge projects were consolidated. The said Act of June 13, 1902 also provided for a depth in the canal and throughout the entire waterway of nineteen feet—that is, from Lake Michigan through said canal into and throughout said Sturgeon Bay. This work was completed in 1904. The Act of March 2, 1919 provided for the formation of the turning basin near the westerly end of the revetted canal, and the work was completed in 1919. The present operations consist in maintaining the said works with a depth of nineteen feet

throughout. The United States has maintained and is maintaining the depth of water for navigation throughout said works at nineteen feet and the actual depth of water has been and is said amount. The total expenditures made by the United States in the improvements above mentioned of the said harbor to and including the year 1920, is approximately $662,614.21, of which amount $347,281.21 has been expended since January 17, 1900. An additional operation expense up to and including March 4, 1915 of $396,559.61, has also been expended by the Government.

Algoma Harbor.

This harbor is at the mouth of the Ahnapee river. Originally, and before the United States entered upon the improvement of said harbor the depth of water at its entrance was three feet, and within the harbor about five hundred feet from its entrance was a stone ledge with a depth of water over it of about four feet. The Acts of Congress of March 3, 1871, March 3, 1873, March 3, 1875, July 5, 1884 and March 3, 1899 provided for and resulted in the construction of two piers extending into Lake Michigan at the mouth of the river and the dredging of a channel eleven feet deep between the piers, extending approximately fifteen hundred feet inside the river mouth. The Act of March 2, 1907 provided for the construction of an outer harbor with a depth of fourteen feet in the harbor and the channel above described between said piers and inside the river mouth. The present work of the Government consists in maintaining same. The depth of water is the project depth above mentioned, and is and has been maintained by the United States. The United States has expended in the construction and maintenance of its works in said harbor, approximately the sum of $351,771.21, of which sum $178,-

777.21 has been expended since the opening of The Sanitary District's main channel.

Kewaunee Harbor.

In 1880 the Kewaunee river flowed about due south toward Kewaunee, and made a sharp bend in Kewaunee and thence flowed northward parallel to Lake Michigan about three hundred feet therefrom for a distance of about two thousand feet to its mouth, which was about twenty-five feet wide and had a depth of about three feet. Under the Act of Congress of March 3, 1881, a channel thirteen feet deep, the project depth, was cut through the above mentioned bend in said river and extended into Lake Michigan between parallel piers which form the present harbor entrance. The natural mouth of the river is closed and the part of the old river bed which led northward to the natural mouth is a portion of the inner harbor. This project was completed in 1898. Under the Act of Congress of June 25, 1910, the depth of water in said entrance channel was increased to eighteen feet, with a turning basin of the same depth made by cutting off part of the point of land included between the old and the present river channels. Said depth of water has been and is maintained by the United States. The United States has expended, in the construction and maintenance of said works, approximately the sum of $276,800, of which said sum approximately $126,800 has been expended since the opening of The Sanitary District channel in 1900.

Manitowoc Harbor.

This harbor is located at the mouth of the Manitowoc river. Originally, and before the United States improved said harbor, a bar over which there was only four feet

of water, obstructed the entrance. The depth of water in the river for a short distance from its mouth was about ten feet. Under the Act of Congress of August 30th, 1852, two parallel piers were constructed extending into Lake Michigan on either side of the mouth of the Manitowoc river, and a channel between said piers approximately ten feet deep was dredged to connect the said river and lake. Under the Acts of Congress of March 3, 1881, September 19, 1900, June 3, 1896 and June 13, 1902, piers were extended and the channel depths were increased to eighteen feet and a breakwater was also constructed eight hundred feet long. The entire project was completed in 1903. Under the Act of Congress of March 2nd, 1907, it was provided that the channel between said piers and up said river for a short distance should be maintained at eighteen feet in depth, and under said act there was constructed a stilling basin at the harbor entrance. This was completed in 1910. The present work consists in the maintenance of said works. The United States has maintained and is maintaining the said harbor at the above mentioned project depth, and it has expended in the construction and maintenance of said works, approximately the sum of $938,560.00, of which said sum there has been expended, since the opening of the Sanitary District channel in 1900, the sum of $568,300.

Sheboygan Harbor.

This harbor is located at the mouth of the Sheboygan river. In its original condition the entrance to the harbor was guarded by a bar over which there was only three to four feet of water. Before the United States assumed control of said harbor, Sheboygan built two parallel piers one hundred and seventy-five feet apart, extending into Lake Michigan at the mouth of the Sheboygan

river, and it dredged a channel between them approximately twelve feet deep. Under the Acts of Congress of June 23, 1866, March 3, 1873, March 3, 1881, August 18, 1894, March 3, 1899 and June 13, 1902, the piers were extended several times, the width between them increased, the project depth increased by stages to nineteen feet and a north breakwater was constructed six hundred feet long. This work was completed in 1904. The Act of Congress of March 2, 1907, provided for maintaining a nineteen foot channel and works between said breakwater and in said river and for extending the north breakwater shoreward; for building a south breakwater; and for removing the outer portions of the piers for the purpose of forming a stilling basin. This was completed in the year 1915. The United States is and has been maintaining said harbor works at said project depth and has expended in the construction and maintenance of said works approximately the sum of $1,054,268.12, of which amount it has expended since the opening of said drainage channel the sum of $659,819.21.

Port Washington Harbor.

This is an artificial "Y" shaped harbor consisting of a dredged and jettied entrance channel and two dredged basins. Prior to the time when the United States improved said harbor the depth of water was but a few feet. By the Acts of Congress of July 11, 1870, and August 14, 1876, two parallel piers were constructed into the lake and two basins forming the present harbor were excavated inside the shore line and dredging between the piers and in the basin was done to a depth of 11 feet. This improvement was completed in 1895. By the Act of Congress of June 25, 1910, the project depth in the channel and basins was increased to 16 feet and the work of the United States is now confined to mainte-

nance of said depth and works. The United States has maintained and is maintaining said project depth of water and has expended in the construction and maintenance to the year 1920 the sum of approximately $258,400.00, of which sum approximately $63,900.00 has been expended since the opening of said drainage channel.

Milwaukee Harbor.

The natural mouth of the Milwaukee river was about 3000 feet southerly from the present artificial outlet and the depth of water at the mouth of said river prior to the time the United States improved said harbor was approximately 4½ feet. The said artificial outlet was formed by the construction of piers and dredging between them and thence through the low and narrow neck of land that separated the river and lake at this point. The Milwaukee river flowing down from the north is joined about ⅝ mile above the inner ends of the piers by the Menominee river, entering from the west, and, about 3000 feet south of the piers, where the natural mouth formerly discharged, the Kinnickinnic river empties from the south. The channels of said rivers are narrow, tortuous and not provided with turning basins; and navigation thereon is difficult. For a short distance in said river channels the City of Milwaukee has maintained a depth and is now maintaining a depth of water of approximately 19 feet. The Act of Congress of March 3, 1843, and the Act of Congress of August 30, 1852, provided for improving the original mouth by parallel piers and dredging and the formation of the jettied channel at the present outlet of 11 feet depth. The Act of April 10, 1869, provided for pier extensions. The Act of March 3, 1899, provided for the deepening of the channel between said piers and to the Milwaukee river to 19 feet as the project depth. The Act of Congress of March

2, 1907, provided for the maintenance of the 19 foot entrance channel to the said Milwaukee river, rebuilding certain piers and doing other work. This work was completed in 1910. The harbor of refuge was adopted by the United States under the Act of Congress of March 3, 1881. The breakwater for said harbor of refuge was extended under said Act of 1907, 1,000 feet south. The Act of June 13, 1902, consolidated the work on the project for the harbor of refuge with the project for the Milwaukee outer and inner harbors. The Acts of Congress of June 25, 1910, provides for the improvement of the river channels, construction of turning basins and the maintenance of all channels to 19 feet; also for the widening of the river channels. This work has not been completed owing to the failure of the City of Milwaukee to perform certain conditions necessary to make available the appropriation for said work by the United States. The United States has maintained and is maintaining said project depth of 19 feet in the said outer and inner harbors and has expended in the construction and maintenance of said works at said harbor the sum of approximately $2,473,975.36, of which said sum there has been expended by it $1,323,150.00 since the opening of the main channel of the Sanitary District.

Racine Harbor.

This harbor is located at the mouth of Root river. Originally the discharge of the river was variable and the depth of water at the lake outlet was from 2 to 3 feet which was increased by freshets to approximately 7 feet and at times there was absolute closure. Prior to the year 1844 local enterprise in participation with the United States government improved this harbor which consisted of a channel approximately 10 feet deep between piers 160 feet apart. By the Act of Congress of June 23,

1866, piers were extended and the channel between them was deepened to the project depth of 14 feet. By the Act of March 3, 1899, the channel was widened and the depth was increased to the project depth of 19 feet and by the Act of June 13, 1902, a breakwater was constructed 600 feet long. The said projects were completed in 1905. The Acts of Congress of March 2, 1907, and June 25, 1910, provided for the maintenance of the 19 foot entrance channel and works incident thereto; for the formation of an outer harbor or wave-stilling basin by extending the old north breakwater to the shore line and removing the outer portion of the north pier, also for constructing a south concrete breakwater and removing the present south pier. Work upon the breakwater was commenced in 1916 and was completed in 1919. The United States is maintaining and has maintained the project depth of 19 feet in said harbor and channels and has expended in the construction and maintenance of said harbor approximately the sum of $1,169,742.21, of which said sum there has been expended $832,957.21 since the opening of the drainage channel.

Kenosha Harbor.

This harbor is located at the mouth of Pike creek. Originally at the discharge of Pike creek the depth of water was approximately 2 feet. By the Act of Congress of August 30, 1852, a channel 10 feet deep between two parallel piers 150 feet apart and said piers were constructed to the outlet of Pike creek. By the Act of Congress of June 23, 1866, the depth of said channel was increased to 14 feet and by the Act of Congress of September 19, 1890, the basin or inner harbor was dredged to said depth. By the Act of Congress of March 3, 1899, the north pier to widen the channel was removed and rebuilt and the channel and basin was dredged to a depth

of 19 feet and 18 feet respectively; and, also a breakwater 600 feet long was constructed. This work was completed in 1900. By the Act of Congress of March 2, 1907, the landward end of the breakwater was extended 200 feet and the maintenance of the 19 feet entrance channel and the 18 feet basin in depth was provided for. The United States has been and is maintaining the said project depth of water in said harbor and has expended in the said improvement the sum of approximately $630,807.41 of which said sum $331,500.00 has been expended since the opening of the drainage channel.

Superior Harbor or Bay.

The harbor of Duluth, Minn., and Superior, Wisconsin, have been for a number of years treated by the United States and Congress as one harbor. The work of improvement of the harbor of Duluth and Superior was combined as one project in the River and Harbor Act of Congress of June 3, 1896. Said harbor embraces all the navigable waters lying inside of Minnesota point and along the fronts of the cities of Duluth and Superior and includes the Duluth canal, Superior Entry, Superior bay, Allonez bay, St. Louis bay, and St. Louis river, for a certain distance from its mouth. The bays were originally and before improvement expanses of shallow water with a general depth of only 8 to 9 feet. The United States began the improvement of Superior entry in 1867 and its operations at Duluth in 1871. The Duluth canal was cut through Minnesota point by the City of Duluth in 1870 and 1871 and in 1873 its maintenance and improvement were undertaken by the United States providing an inner harbor of easy access in place of the exterior harbor which was formed by breakwater theretofor constructed by the United States. The project of the United States of 1883 completed in 1887 provided 16 feet depth

of water for navigation through the two entries in Duluth harbor basin and in channels paralleling dock lines of Superior and St. Louis bays and up St. Louis river. The depth of water at some points has been and is maintained by the United States at 20 feet and at other points in said harbor the depth of water is greater. The United States has expended in the improvement of said harbor approximately the sum of $8,235,028.00 of which said sum there has been expended since the opening of the drainage channel approximately $5,430,195.00.

Ashland Harbor.

This harbor is located near the head of Chequamegon bay. The natural depth of water in said harbor to the lower docks is approximately 19 feet. Under an Act of Congress passed in the year 1889 a breakwater was constructed and a channel was dredged along the dock front. In 1896 the United States established a harbor line along the city front at a distance of approximately 2,000 feet from the shore line and in 1897 dredged a channel 20 feet deep outside the harbor line. In 1903 and in 1907 the United States extended said channel. The depth of water provided by the improvement projects of the United States in said harbor is approximately 20 feet, which depth has been provided and is maintained by the United States. The United States has expended in the improvement and maintenance of said harbor works $650,500.00, of which said sum $411,000.00 has been expended since the opening of the drainage channel.

WASHBURN HARBOR.

This harbor is located on the west side of Chequamegon bay and about 4½ miles north of Ashland and is a part of Ashland harbor, and the depth of water in said harbor is less than that maintained in Ashland harbor, above mentioned. The depth of water in said harbor, as it now exists, has been created by the appropriations and expenditures made by the United States in dredging and improving said harbor.

(*a*) The facilities for navigation in said harbors located on Lake Michigan in Wisconsin and in those located on Lake Superior in Wisconsin have been provided by the United States under improvement projects specified by various Acts of Congress. The depth of water in all such harbors has been increased from time to time under said improvement projects, so that the project depth now maintained by the United States in each and every of said harbors is many feet greater than the original depth, and such improvements in facilities of navigation including width of channels, safety of entrance to harbors, depth of harbor basins and channels were all made solely and only at the expense of the United States to which neither the complainant nor any of its people have directly contributed. The said facilities for navigation in the various forms mentioned have been provided by the United States to suit the demands of commerce in said harbors. Each and every one of said harbors has been improved in some of the various ways mentioned since the defendant, The Sanitary District of Chicago, projected its work for the diversion of water from Lake Michigan, or since the main channel of The Sanitary District of Chicago has been opened. The United States in making said improvements and

fixing the project depth determined upon the project depth and such project depths for each of said harbors, taking into consideration effects upon the surface elevation of the water of Lake Michigan, if any there were or should be, due to the diversion of water by the defendant, The Sanitary District of Chicago; and the said project depths of water in each of said harbors would not have been greater had there been no diversion of water at Chicago.

In connection with the improvements as above stated in said harbors and each of them, the United States improved harbors located upon Lake Michigan within various other states, those harbors located upon lakes Huron and Erie and the harbors or ports located upon connecting channels of said lakes, including also the connecting channels themselves. This was done by the United States so that commerce carried on between any one of the harbors located upon the said lakes within any of the states or upon said connecting channels or through said connecting channels would be accommodated. Boats, for instance, desiring to ply between harbors located in Wisconsin and harbors located on Lake Erie in Ohio could do so without finding the depth of water in one harbor less than the depth in the other and without finding obstruction to their navigation in said connecting channels. Thus the United States by its improvement of navigation facilities upon the Great Lakes system has kept pace with the demands of commerce for such facilities of navigation as such commerce is carried on between the various ports or harbors and through the various connecting channels above mentioned. All such improvements have been made with due consideration to the lowering, if any there be, of the surface elevations of Lakes Huron and Michigan and Erie and connecting channels by the diversion at Chi-

cago; and the said depth of water so provided by the United States at the various harbors and ports upon the Great Lakes and the depth in the connecting channels in the Great Lakes, would not have been greater had there been no diversion of water by The Sanitary District of Chicago. Said improvement in said harbors and ports and in said connecting channels have been made with due consideration to the effects, if any, upon the surface elevations of the Great Lakes of the diversions of waters from the Great Lakes system other than that of the diversion of water by The Sanitary District of Chicago. The commerce carried on through or in said harbors located upon Lake Michigan in Wisconsin, and upon Lake Superior in Wisconsin, has been, is and will be accommodated fully by the facilities for navigation now or which may be provided by the United States without any undue or unjust burden being cast upon said commerce by reason of the depths of water in said harbors. Neither the State of Wisconsin, nor the people of Wisconsin, nor any one of them have been or are injured by lack of sufficient depth of water in said harbors or in any one of them.

(*b*) The United States about the year 1894 provided for and caused the installation of certain works at the outlet of Lake Superior, whereby the out flow through the St. Mary's river has been controlled and said out flow has at times been greatly diminished, thus causing a decrease in the supply of water to Lake Michigan, Huron and Erie. The United States has and has assumed jurisdiction of navigation and of the facilities for navigation upon the entire Great Lakes system by the various works and improvements that it has constructed including said controlling works at the outlet of Lake Superior and also by the improvement of the channels connecting the Great Lakes.

The United States constructed at the Galops rapids a dam known the Galops dam, wherby one of the channels of the St. Lawrence river was entirely cut off thus causing the raising of the surface elevation of Lake Ontario to an amount in inches more than the claimed lowering of the surface elevation of said lake due to the diversion of water by the defendant, The Sanitary District of Chicago. Said dam was constructed about the year 1903.

The shallowness of the channels connecting Lake Erie with Lake Ontario is such that boats of the maximum draft that may enter any of the harbors located on Lake Michigan in Wisconsin, or located upon Lake Superior in Wisconsin, prevents and will prevent such boats from passing through said channels to Lake Ontario; so that any effect of the diversion of water at Chicago upon Lake Ontario can have no effect upon commerce in said Wisconsin harbors.

31. These defendants, and each of them, deny that complainant is entitled to the relief or any part thereof as in said bill of complaint demanded, and these defendants and each of them state that said bill of complaint is inadequate and insufficient in law and does not on its face entitle the said complainant to the relief prayed for in and by said bill of complaint; and these defendants furthermore move that the bill of complaint be dismissed for want of equity; and these defendants and each of them as to each and every allegation of the said bill of complaint not herein admitted, answered or specifically denied, hereby expressly deny; and these defendants and each of them pray the same advantage in this answer as if they had pleaded or demurred to said bill of complaint and pray that it be dismissed with defendants'

reasonable costs and charges in this behalf most wrongfully sustained.

STATE OF ILLINOIS, *Defendant.*

By Edward J. Brundage
Attorney General of Illinois,
Its Solicitor.

THE SANITARY DISTRICT OF CHICAGO, *Defendant,*

By Wm. F. Mulvihill
Attorney, The Sanitary District of Chicago, Its Solicitor.

Clyde L. Day

Morton S. Carey

Edward D. Adsit

Solicitors for said Defendants and each of them.

APPENDIX.

EXHIBIT A.

An Act to create sanitary districts, and to remove obstructions in the DesPlaines and Illinois rivers. Approved May 29, 1889, in force July 1, 1889.

Section 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly*: That whenever any area of contiguous territory within the limits of a single country shall contain two or more incorporated cities, towns, or villages, and shall be so situated that the maintenance of a common outlet for the drainage thereof will conduce to the preservation of the public health, the same may be incorporated as a sanitary district under this Act, in the manner following: Any 5,000 legal voters resident within the limits of such proposed sanitary district may petition the county judge of the county in which they reside, to cause the question to be submitted to the legal voters of such proposed district whether they will organize as a sanitary district under this Act. Such petition shall be addressed to the county judge, and shall contain a definite description of the territory intended to be embraced in such district, and the name of such proposed sanitary district: *Provided, However,* that no territory shall be included in any municipal corporation formed hereunder which is not situated within the limits of a city, incorporated town or village, or within three miles thereof, and no territory shall be included within more than one sanitary district under this Act. Upon the filing of such petition in the office of the county clerk of the county in which such territory is sit-

uated, it shall be the duty of the county judge to call to his assistance two judges of the Circuit Court, and such judges shall constitute a board of commissioners which shall have power and authority to consider the boundaries of any such proposed sanitary district, whether the same shall be described in such petition or otherwise. Notice shall be given by such county judge of the time and place where such commissioners will meet, by a publication inserted in one or more daily papers published in such county at least twenty days prior to such meeting. At such meeting, the county judge shall preside, and all persons in such proposed sanitary district shall have an opportunity to be heard touching the location and boundary of such proposed district and make suggestions regarding the same, and such commissioners, after hearing statements, evidence and suggestions, shall fix and determine the limits and boundaries of such proposed district and for that purpose and to that extent, may alter and amend such petition. After such determination by said commissioners or a majority of them, the county judge shall submit to the legal voters of the proposed sanitary district the question of the organization and establishment of the proposed sanitary district, as determined by said commissioners at an election to be held on the first Tuesday after the first Monday in November thence next ensuing, notice whereof shall be given by said commissioners, at least twenty days prior thereto, by publication in one or more daily papers published within such proposed sanitary district, such notice to specify briefly the purpose of such election, with a description of such proposed district. Each legal voter resident within such proposed sanitary district shall have the right to cast a ballot at such election, with the words thereon, "For Sanitary District," or, "Against Sanitary District." The ballots

so cast shall be received, returned and canvassed in the same manner and by the same officers as is provided by law in the case of ballots cast for county officers. The County Judge shall cause a statement of the result of such election to be spread upon the records of the county court. If a majority of the votes cast upon the question of the incorporation of the proposed sanitary district shall be in favor of the proposed sanitary district, such proposed district shall thenceforth be deemed an organized sanitary district under this Act.

2. All courts in this State shall take judicial notice of the existence of all sanitary districts organized under this Act. Upon the organization of any sanitary district under this Act, the county judge shall call an election to elect officers, and cause notice thereof to be posted or published, and perform all other acts in reference to such election in like manner as nearly as may be as he is required to perform in reference to the election of officers in newly organized cities under the provisions of an act entitled "An Act to provide for the incorporation of cities and villages," approved April 10, 1872.

3. In each sanitary district organized under this Act, there shall be elected nine trustees who shall hold their offices for five years, and until their successors are elected and qualified, except the term of office of the first trustees elected, shall be until five years after the first Monday in December after their election. The election of trustees, after the first, shall be on the Tuesday next after the first Monday in November, in every fifth year. In all elections for trustees, each qualified voter may vote for as many candidates as there are trustees to be elected, or he may distribute his vote among not less than five-ninths of the candidates to be elected, giving to each of the candidates among whom he distributes the same, the same number of votes or fractional parts of votes.

The trustees shall choose one of their number president, and such sanitary district shall, from the time of the first election held by it under this Act, be construed in law and equity a body corporate and politic and by the name and style of The Sanitary District of ———, and by such name and style may sue and be sued, contract and be contracted with, acquire and hold real estate and personal property necessary for corporate purposes, and adopt a common seal and alter the same at pleasure.

4. The trustees elected in pursuance of the foregoing provisions of this Act shall constitute a board of trustees for the district by which they are elected, which board of trustees is hereby declared to be the corporate authorities of such sanitary district, and shall exercise all the powers and manage and control all the affairs and property of such district. Said board of trustees shall have the right to elect a clerk, treasurer, chief engineer and attorney for such municipality, who shall hold their respective offices during the pleasure of the board, and who shall give such bond as may be required by said board. Said board may prescribe the duties and fix the compensation of all the officers and employes of said sanitary district: *Provided, However,* that the salary of the president of said board of trustees shall in no case exceed the sum of four thousand dollars per annum; and the salary of the other members of said board shall not exceed three thousand dollars per annum: *And Provided, Further,* that the amount received by any attorney shall not exceed the sum of five thousand dollars ($5,000) per annum. Said board of trustees shall have full power to pass all necessary ordinances, rules and regulations for the proper management and conduct of the business of said board of trustees and of said corporation and for carrying into effect the objects for which such sanitary district is formed.

5. All ordinances making any appropriations shall, within one month after they have passed, be published at least once in a newspaper published in such district, or if no such newspaper of general circulation is published therein, by posting copies of the same in three public places in the district; and no such ordinance shall take effect until ten days after it is so published, and all other ordinances, orders and resolutions, shall take effect from and after their passage unless otherwise provided therein.

6. All ordinances, orders and resolutions, and the date of publication thereof may be proven by the certificate of the clerk, under the seal of the corporation, and when printed in book or pamphlet form, and purporting to be published by the board of trustees, and such book or pamphlet shall be received as evidence of the passage and legal publication of such ordinances, orders and resolution, as of the dates mentioned in such book or pamphlet, in all courts and places without further proof.

7. The board of trustees of any sanitary district organized under this Act shall have power to provide for the drainage of such district by laying out, establishing, constructing and maintaining one or more main channels, drains, ditches and outlets for carrying off and disposing of the drainage (including the sewage) of such district, together with such adjuncts and additions thereto as may be necessary or proper to cause such channels or outlets to accomplish the end for which they are designed in a satisfactory manner; also to make and establish docks adjacent to any navigable channel made under the provisions hereof for drainage purposes, and to lease, manage and control such docks, and also to control and dispose of any water-power which may be incidentally created in the construction and use of said channels or

outlets, but in no case shall said board have any power to control water after it passes beyond its channel, waterways, races or structures into a river or natural waterway or channel, or water-power, or docks, situated on such river or natural waterway or channel: *Provided, However,* nothing in this Act shall be construed to abridge or prevent the State from hereafter requiring a portion of the funds derived from such water power, dockage or wharfage to be paid into the State Treasury to be used for State purposes. Such channels or outlets may extend outside the territory included within such sanitary district, and the rights and powers of said board of trustees over the portion of such channel or outlet lying outside of such district shall be the same as those vested in said board over that portion of such channels or outlets within the said district.

8. Such sanitary district may acquire, by purchase, condemnation, or otherwise, any and all real and personal property, right of way and privilege, either within or without its corporate limits that may be required for its corporate purposes: *Provided,* all moneys for the purchase and condemnation of any property, shall be paid before possession is taken or any work done on the premises damaged by the construction of such channel or outlet, and in case of an appeal from the county court taken by either party, whereby the amount of damages is not finally determined, the amount of judgment in such court shall be deposited at some bank, to be designated by the judge thereof, subject to the payment of such damages on orders signed by such county judge, whenever the amount of damages is finally determined; and, when not longer required for such purposes, to sell, convey, vacate and release the same, subject to the reservation contained in section 7, relating to water powers and docks.

9. The corporation may borrow money for corporate purposes, and may issue bonds therefor, but shall not become indebted, in any manner or for any purpose, to an amount to the aggregate to exceed five per centum on the valuation of taxable property therein, to be ascertained by the last assessment for state and county taxes previous to the incurring of such indebtedness: *Provided, However,* that said five per centum shall not exceed the sum of fifteen million dollars ($15,000,000).

10. At the time or before incurring any indebtedness, the board of trustees shall provide for the collection of a direct annual tax sufficient to pay the interest on such debt as it falls due, and also to pay and discharge the principal thereof as the same shall fall due, and at least within twenty years from the time of contracting the same: *Provided,* that the net earnings from water power and docks may be appropriated and applied to the purpose of paying the interest or principal of such indebtedness or both, and to the extent that they will suffice, the direct tax may be remitted.

11. All contracts for work to be done by such municipality, the expense of which will exceed five hundred dollars, shall be let to the lowest responsible bidder therefor, upon not less than sixty days public notice of the terms and conditions upon which the contract is to be let having been given by publication in a newspaper of general circulation published in said district, and the said board shall have the power and authority to reject any and all bids, and re-advertise. *Provided,* no person shall be employed on said work unless he be a citizen of the United States or has in good faith declared his intentions to become such citizen. In all cases where an alien, after filing his declaration of intention to become a citizen of the United States shall for the space of three months after he could lawfully do so, fail to take out his final

papers and complete his citizenship, such failure shall be *prima facie* evidence that his declaration of intentions, was not made in good faith, and that eight hours shall constitute a day's work.

12. The board of trustees may levy and collect taxes for corporate purposes upon property within the territorial limits of such sanitary district, the aggregate amount of which in any one year shall not exceed one-half of one percentum of the value of the taxable property within the corporate limits, as the same shall be assessed and equalized for state and county taxes of the year in which the levy is made. Said board shall cause the amount required to be raised by taxation in each year to be certified by the county clerk, on or before the second Tuesday in August, provided in section one hundred and twenty-two of the general revenue law. All taxes so levied and certified shall be collected and enforced in the same manner and by the same officers as state and county taxes, and shall be paid over by the officer collecting the same to the treasurer of The Sanitary District, in the manner and at the time provided by the general revenue law.

13. The board of trustees shall have power to defray the expenses of any improvement made by it in the execution of the powers hereby granted to such incorporation, by special assessment, or by general taxation, or partly by special assessment and partly by general taxation as they shall by ordinance prescribe. It shall constitute no objection to any special assessment that the improvement for which the same is levied is partly outside the limits of such incorporation, but no special assessment shall be made upon property situated outside of such sanitary district, and in no case shall any property be assessed more than it will be benefited by the improvement for which the assessment is levied. The proceedings

for making, levying, collecting and enforcing of any special assessment levied hereunder shall be the same as nearly as may be as is prescribed by article nine of an Act entitled "An Act to provide for the incorporation of cities and villages," approved April 10, 1872. Whenever in said Act the words "city council" are used, the same shall apply to the board of trustees constituted by this Act, and the words applying to the City or its officers in that article shall be held to apply to the corporation hereby created and to its officers.

14. When any assessment is made under this Act, the ordinance authorizing such assessment may provide that it be divided into equal annual installments, not more than twenty in number, and fix the amount and time of payment of each installment, and that the installment shall bear interest at a rate not exceeding six per cent, per annum, payable annually, from the date fixed in said ordinance and the several installments and interest thereon may be collected and enforced, as they shall become due, in the manner provided for the enforcement of assessments under said article 9. No more of any assessment need be returned or certified to the county collector than will show the amount due and unpaid at the time of such return, and no sale of any parcel of land for any installment of an assessment shall discharge the premises from any subsequent installment of the same or any other assessment. Anyone or all of the installments may be paid any time after the assessment is confirmed, with accrued interest, if any, to the date of payment.

15. Where any assessment is made payable in installments, the board of trustees may issue bonds or certificates not exceeding in amount eighty per centum of the unpaid portion of such assessment at the date of the issue thereof, payable only out of such assessment, and bearing interest at a rate not exceeding the rate

of interest upon the installments of such assessments. The board of trustees shall have the right to call in and pay off said bonds or certificates as fast as there is money received into the treasury from the assessment against which the same are issued, and all moneys received upon such assessment shall be applied to the payment of said certificates or bonds until they are fully satisfied.

16. Whenever the board of trustees of any sanitary district shall pass an ordinance for the making of any improvement which such district is authorized to make, the making of which will require that private property should be taken or damaged, such district may cause compensation therefor to be ascertained and condemn and acquire possession thereof in the same manner, as nearly as may be, as is provided in an Act entitled "An Act to provide for the exercise of the right of eminent domain," approved April 10, 1872: *Provided, However,* that proceeding to ascertain the compensation to be paid for taking or damaging private property shall in all cases, be instituted in the county where the property sought to be taken or damaged is situated: *And, Provided,* that all damages to property, whether determined by agreement or by final judgment of court, shall be paid out of the annual district tax prior to the payment of any other debt or obligation.

17. When it shall be necessary in making any improvements which any district is authorized by this Act to make, to enter upon any public property or property held for public use, such district shall have the power so to do, and may acquire the necessary right of way over such property held for public use in the same manner as is above provided for acquiring private property, and may enter upon, use, widen, deepen and improve any navigable or other waters, waterways, canal or lake: *Provided,*

the public use thereof shall not be unnecessarily interrupted or interfered with, and that the same shall be restored to its former usefulness as soon as practicable: *Provided, However,* that no such district shall occupy any portion of the Illinois and Michigan Canal outside of the limits of the county in which such district is situated, for the site of any such improvement, except to cross the same, and then only in such a way as not to impair the usefulness of said canal or to the injury of the right of the State therein, and only under the direction and supervision of the canal commissioners: *And, Provided, Further,* that no district shall be required to make any compensation for the use of so much of said canal as lies within the limits of the county in which said district is situated, except for transportation purposes.

18. In making any special assessment for any improvement which requires the taking or damaging of property, the cost of acquiring the right to damage or take such property may be estimated and included in the assessment as a part of the cost of making such improvement.

19. Every sanitary district shall be liable for all damages to real estate within or without such district which shall be overflowed or otherwise damaged by reason of the construction, enlargement or use of any channel, ditch, drain, outlet or other improvement under the provisions of this Act; and actions to recover such damages may be brought in the county where such real estate is situated, or in the county where such sanitary district is located, at the option of the party claiming to be injured. And in case judgment is rendered against such district for damage the plaintiff shall also recover his reasonable attorney's fees, to be taxed as costs of suit: *Provided, However,* it shall appear on the trial that the plaintiff notified the trustees of such district, in

writing, at least 60 days before suit was commenced by leaving a copy of such notice with some one of the trustees of such district stating that he claims damages to the amount of ——— dollars, by reason of (here insert the cause of damage) and intends to sue for the same: *And, Provided, Further,* that the amount recovered shall be larger than the amount offered by said trustees (if anything) as a compromise for damages sustained.

20. Any channel or outlet constructed under the provisions of this Act, which shall cause the discharge of sewages into or through any river or stream of water beyond or without the limits of the district constructing the same, shall be of sufficient size and capacity to produce a continuous flow of water of at least two hundred cubic feet per minute for each one thousand of the population of the district drained thereby, and the same shall be kept and maintained of such size and such condition that the water thereof shall be neither offensive or injurious to the health of any of the people of this State, and before any sewage shall be discharged into such channel or outlet all garbage, dead animals, and parts thereof, and other solids shall be taken therefrom.

21. In case any sanitary district in this State formed under the provisions of this Act shall introduce sewage into any river or stream of water, or natural or artificial water course, beyond or without the limits of such district, without conforming to the provisions of this Act or having introduced such sewage into such water course, shall fail to comply with any of the provisions of this Act, an action to enforce compliance shall be brought by the Attorney General of this State, in the Courts of any county wherein such water course is situated, or he may authorize the State's Attorney of any such county to commence and prosecute such action in any such county: *Provided,* that nothing in this section

contained shall be construed to prevent the prosecution of any action or proceeding by individuals or bodies corporate or politic against such district.

22. Nothing in this Act contained shall be so construed as to constitute a contract or grant between the State of Illinois and any sanitary district formed under its provisions, or to prevent, debar or deprive the State of Illinois from, at any time in the future, altering, amending or repealing this Act, *Or* imposing any conditions, restrictions or requirements other, different or additional to any herein contained upon any sanitary district which may be formed hereunder.

23. If any channel is constructed under the provisions hereof by means of which any of the waters of Lake Michigan shall be caused to pass into the Des-Plaines or Illinois rivers such channel shall be constructed of sufficient size and capacity to produce and maintain at all times a continuous flow of not less than 300,000 cubic feet of water per minute, and to be of a depth of not less than fourteen feet, and a current not exceeding three miles per hour, and if any portion of any such channel shall be cut through a territory with a rocky stratum where such rocky stratum is above a grade sufficient to produce a depth of water from Lake Michigan of not less than eighteen feet, such portion of said channel shall have double the flowing capacity above provided for, and a width of not less than one hundred and sixty feet at the bottom capable of producing a depth of not less than eighteen feet of water. If the population of the district drained into such channel shall at any time exceed 1,500,000, such channel shall be made and kept of such size and in such condition that it will produce and maintain at all times a continuous flow of not less than 20,000 cubic feet of water per minute for each 100,000 of the population of such district, at a cur-

rent of not more than three miles per hour, and if at any time the general government shall improve the Des-Plaines or Illinois rivers, so that the same shall be capable of receiving a flow of 600,000 cubic feet of water per minute, or more, from said channel, and shall provide for the payment of all damages which any extra flow above 300,000 cubic feet of water per minute from such channel may cause to private property so as to save harmless the said district from all liability therefrom, then such sanitary district shall within one year thereafter, enlarge the entire channel leading into said DesPlaines and Illinois rivers from said district to a sufficient size and capacity to produce and maintain a continuous flow throughout the same of not less than 600,000 cubic feet of water per minute with a current of not more than three miles per hour and such channel shall be constructed upon such grade as to be capable of producing a depth of water not less than eighteen feet throughout said channel, and shall have a width of not less than one hundred and sixty feet at the bottom. In case a channel is constructed in the DesPlaines river as contemplated in this section it shall be carried down the slope between Lockport and Joliet to the pool commonly known as the upper basin, of sufficient width and depth to carry off the water the channel shall bring down from above. The district constructing a channel to carry water from Lake Michigan of any amount authorized by this act may correct, modify and remove obstructions in the DesPlaines and Illinois rivers wherever it shall be necessary so to do to prevent overflow or damage along said river, and shall remove the dams at Henry and Copperas creek in the Illinois river, before any water shall be turned into the said channel.

And the Canal Commissioners, if they shall find at any time that an additional supply of water has been added

to either of said rivers, by any drainage district or districts, to maintain a depth of not less than six feet from any dam owned by the State to and into the first lock of the Illinois and Michigan Canal at LaSalle, without the aid of any such dam, at low water, then it shall be the duty of said Canal Commissioners to cause such dam or dams to be removed. This act shall not be construed to authorize the injury or destruction of existing water-power rights.

24. When such channel shall be completed, and the water turned therein, to the amount of three hundred thousand cubic feet of water per minute, the same is hereby declared a navigable stream, and whenever the general government shall improve the DesPlaines and Illinois rivers, for navigation, to connect with this channel, said general government shall have full control over the same for navigation purposes, but not to interfere with its control for sanitary or drainage purposes.

25. Any district formed hereunder shall have the right to permit territory lying outside its limits and within the same county to drain into and use any channel or drain made by it, upon such payments, terms and conditions as may be mutually agreed upon, and any district formed hereunder is hereby given full power and authority to contract for the right to use any drain or channel which may be made by any other sanitary district, upon such terms as may be mutually agreed upon, and to raise the money called for by any such contract in the same way and to the same extent as such district is authorized to raise money for any other corporate purposes: *Provided*, that where the united flow of any sanitary districts thus co-operating shall pass into any channel constructed within the limits of the county wherein such districts are located and which passes into the DesPlaines or Illinois rivers, such united flow shall in no

case and at no time be less than 20,000 cubic feet of water per minute for each one hundred thousand of the aggregate of the population of the districts co-operating: *Provided*, nothing in this act shall in any wise be so construed as to diminish, impair or remove any right or rights of any city, village, township or corporation, body politic or individual situated on the DesPlaines or Illinois rivers or their tributaries within the valleys of the same to use the channel for drainage or otherwise not inconsistent with the rights of the district constructing the same as expressed in this act.

26. Whenever in any such sanitary district there shall be a city, incorporated town or village, which owns a system of waterworks and supplies water from a lake or other source which will be saved and preserved from sewage pollution, by the construction of the main channel, drain, ditch, or outlet herein provided for; and the turning of the sewage, of such city and district therein, and there shall be in such sanitary district, any territory bordering on any such city, incorporated town or village, within the limits of another city incorporated town or village which does not own any system of waterworks at the time of the creation of such sanitary dsitrict, then upon application by the corporate authorities of such latter named city, incorporated town or village, the corporate authorities of such city, incorporated town or village, having such system of waterworks shall furnish water at the boundary line between such municipalities by means of its waterworks to the corporate authorities asking for the same in such quantities as may be required to supply consumers within said territory, at no greater price or charge than it charges and collects of consumers within its limits for water furnished through meters in like large quantities.

27. If any channel shall be constructed under the provisions of section 23 of this act, it shall be the duty of the trustees of such district, when such channel shall be completed, and before any water or sewage shall be admitted therein to duly notify in writing, the Governor of this State of such fact, and the Governor shall thereupon appoint three discreet persons as commissioners, one of whom shall be a resident of the city of Joliet, or between said city and the city of LaSalle and one a resident of the city of LaSalle, or between said city and the city of Peoria, and one a resident of the city of Peoria or between said city and the mouth of the Illinois river, to inspect said work. The said commissioners shall, within ten days after such appointment, meet at the City of Chicago and shall appoint a competent civil engineer, and they may employ such other assistance as they may require to expeditiously perform their duties. The said commission shall take as their datum line for the survey, the datum established by the Illinois and Michigan canal trustees in 1847, and shall make such examination and surveys of Chicago river and of the channel or channels authorized by this act as shall enable them to ascertain whether said channel is of the character and capacity required by this act. And in case they shall find the work in all respects in accordance with the provisions of section 23 of this act, they shall so certify to the Governor, who shall thereupon authorize the water and sewage to be let into said channel. But in case said commissioners shall find said channel is not constructed in accordance with the provisions of this act, it shall be their duty to file in any court of competent jurisdiction, on the chancery side thereof, in their name as such commissioners, a bill against said corporation, which bill shall set forth wherein said work is deficient and fails to comply with the provisions of this act; and said court thereupon issue

an injunction without bond against said defendant, enjoining and restraining it from admitting water or sewage into said channel until the final order of the court. And in case said court, upon hearing, shall determine that said channel is not constructed in accordance with the provisions of this act, said injunction shall be continued until the provisions of this act shall have been fully complied with.

Such commissioners and engineer shall receiver for their services ten dollars per day each, and their reasonable expenses and outlays for the time by them necessarily employed in the discharge of their duties, which shall be paid to them from the State Treasury; and the said Sanitary District shall reimburse the State for all expenses and disbursements on account of said commission.

In any channel is constructed under the provisions of this act, which shall discharge the sewage of a population of more than 300,000 into or through any river beyond or without the limits of the district constructing it, the same shall be constructed in accordance with the provisions of Section 23 of this Act, and if any such channel receives its supply of water from any river or channel connecting with Lake Michigan, it shall be construed as receiving its supply of water from Lake Michigan.

Approved May 29, 1889.

EXHIBIT A-1.

AN ACT to amend Section 12 and 20 of "An act to create sanitary districts and to remove obstructions in the Desplaines and Illinois rivers," approved May 29, 1889, in force July 1, 1889. Approved June 10, 1895. In force July 1, 1895.

Section 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly,* That Sections 12 and 20 of "An Act to create sanitary districts, and to remove obstructions in the Desplaines and Illinois rivers," approved May 29th, 1889, in force July 1, 1889, be and the same are hereby amended to read as follows:

354. TRUSTEES MAY LEVY AND COLLECT TAXES, ETC.) §12. The board of trustees may levy and collect taxes for corporate purposes upon property within the territorial limits of such sanitary district, the aggregate amount of which for each of the years 1895, 1896 and 1897, shall not exceed one and one-half per centum of the value of the taxable property within the corporate limits, as the same shall be assessed and equalized for the state and county taxes of the year in which the levy is made, and the aggregate amount of which in any one year after the year 1897 shall not exceed one-half of one per centum of such value. Said board shall cause the amount required to be raised by taxation in each year to be certified to the county clerk on or before the second Tuesday in August, as provided in section one hundred and twenty-two of the general revenue law. All taxes so levied and certified shall be collected and enforced in the same manner and by the same officers as state and county taxes, and shall be paid over by the officer collecting the same to the treasurer of The Sanitary District in the manner and at the time provided by the general revenue law.

362. Capacity of Channel or Outlet.) §20. Any channel or outlet constructed under the provisions of this Act which shall cause the discharge of sewage into or through any river or stream of water beyond or without the limits of the district constructing the same shall be of sufficient size and capacity to produce a continuous flow of water of at least two hundred cubic feet per minute for each one thousand of the population of the district drained thereby, and the same shall be kept and maintained of such size and in such condition that the water thereof shall be neither offensive or injurious to the health of any of the people of this State; and before any sewage shall be discharged into such channel or outlet, all garbage, dead animals and parts thereof, and other solids shall be taken therefrom, and said district shall, at the time any sewage is turned into or through any such channel or channels, turn into said channel or channels not less than twenty thousand cubic feet of water per minute for every one hundred thousand inhabitants of said district, and shall thereafter maintain the flow of such quantity of water.

EXHIBIT A-2.

An Act extending the powers of sanitary districts organized under an act entitled, "An Act to create sanitary districts and to remove obstructions in the DesPlaines and Illinois rivers," approved May 29, 1889, in force July 1, 1889, to enable such districts to improve certain navigable streams within or auxiliary to such district and to build bridges across such stream. Approved May 13, 1901, in force July 1, 1901.

Section 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That any sanitary district organized under an act entitled, "An Act to create sanitary districts and remove obstructions in the DesPlaines and Illinois rivers," approved May 29, 1889, in force July 1, 1889, which heretofore has or may hereafter use any navigable stream or river for a portion of its channel, or as an adjunct thereto, or auxiliary to its main channel, may for the purpose of widening, deepening or improving the same, for the purposes set forth in the act aforesaid, acquire by purchase, or under and pursuant to the eminent domain laws of this State, or otherwise, sufficient land for the purpose of making such improvement by widening and deepening said stream, as aforesaid.

§2. That wherever it has or may become necessary by reason of the widening, deepening or improving of such river, to construct bridges to meet the altered or changed condition of such stream or river, such sanitary district or districts may construct such bridge or bridges as such improvements, heretofore made or hereafter to be made, may require.

§3. Nothing herein contained shall be construed as depriving any city, village or town situated wholly or partly

within the limits of said sanitary district of any power now exercised in the operation of said bridges; and any bridges built under the provisions of this act to supply or replace a public street or highway bridge, now or hereafter existing, shall, after the construction of said bridge, be operated and controlled for municipal purposes by said city, village or town within which it is located.

Approved May 13, 1901.

EXHIBIT A-3.

AN ACT in relation to The Sanitary District of Chicago, to enlarge the corporate limits of said District and to provide for the navigation of the channels created by such District and to construct dams, waterwheels and other works necessary to develop and render available the power arising from the water passing through its channels and to levy taxes therefor. Approved May 14, 1903. In force July 1, 1903.

369e. SANITARY DISTRICT OF CHICAGO EXTENDED.) Par. 1. *Be it enacted by the People of the State of Illinois represented in the General Assembly:* That the corporate limits of The Sanitary District of Chicago, be, and the same are hereby extended so as to embrace and include within the same, the territory and tracts of land situated in the County of Cook and State of Illinois, hereinafter described, as follows, viz:

First. The territory or tract of land bounded as follows: Beginning at the intersection of the county line between Lake and Cook counties, State of Illinois, with the west shore of Lake Michigan, running thence west along the said county line to the northwest corner of Section three (3), Township forty-two (42) north, Range twelve (12), east of the third principal meridian; thence south to the southeast corner of Section thirty-three

(33), Township forty-two (42) north, Range twelve (12), east of the third principal meridian; thence east to the northwest corner of Section twelve (12), Township forty-one (41) north, Range twelve (12), east of the third principal meridian; thence south to the northwest corner of Section twenty-five (25), in said town and range; thence east to the northeast corner of the west half (½) of the west (½) of said Section twenty-five (25); thence south to the southeast corner of the west half (½) or the west half (½) of Section thirty-six (36) in said town and range; thence east to the northeast corner of the west half (½) of Section one (1), Township forty (40) north, Range twelve (12), east of the third principal meridian; thence south to the southeast corner of the west half (½) of Section thirteen (13) in said township and range; thence east to the southeast corner of Section thirteen (13); thence east, north, northwest and east along the present boundary line of said Sanitary District of Chicago to the shore of Lake Michigan; thence northwesterly along the shore of Lake Michigan to the place of beginning.

Second. The territory or tract of land bounded as follows, to-wit: Commencing at the northeast corner of Section three (3) in Township thirty-seven (37) north, Range thirteen (13), east of the third principal meridian; running thence south to the southwest corner of Section eleven (11), Township thirty-six (36) north, Range thirteen (13), east of the third principal meridian; thence east and south along the boundary lines of Section fourteen (14), in said Township thirty-six (36) to the southeast corner of said Section fourteen (14), thence east to the southeast corner of Section seventeen (17), in Township thirty-six (36) north, Range fifteen (15), east of the third principal meridian; thence north along the east boundary line of the State of Illinois to

its intersection with the shore of Lake Michigan, thence along the shore of Lake Michigan to the south boundary line of the present Sanitary District of Chicago; thence west along the present south boundary line of the said Sanitary District of Chicago to the place of beginning.

369f. Provision for Drainage of Additional Territory — Channel Across Michigan and Illinois Canal—Land for Use of Canal Commissioners.) Par. 2. The board of trustees of said Sanitary District shall have the right to provide for the drainage of the additional territory added to said Sanitary District by this act by laying out, establishing, constructing and maintaining one or more channels, drains, ditches and outlets for carrying off and disposing of the drainage (including the sewage) of such district, together with such adjuncts and additions thereto as may be necessary or proper to cause such channels or outlets to accomplish the end for which they are designed in a satisfactory manner, and shall have the right to use what is known as the "Calumet feeder" of the Illinois and Michigan Canal and lands adjacent to such feeder belonging to the State of Illinois for the site of any such channel, within the limits of the county in which such district is situated, in such manner as said district may elect, and shall also have the right to construct a channel across said Illinois and Michigan Canal, without being required to restore said Illinois and Michigan Canal or said feeder to its former usefulness. If, by reason of said abandonment, a stagnant stream or pool of water shall remain upon the deposits of Chicago sewage, accumulated in said Illinois and Michigan Canal by reason of its years of usefulness by the City of Chicago as a sewage outlet, said Sanitary District shall fill up said canal to a depth sufficient to remove said condition and prevent the spread of pestilence and disease throughout the territory in which said Illinois

and Michigan Canal is abandoned; and the other powers and jurisdiction of said Sanitary District of Chicago over and in connection with such added territory shall be the same as that vested in it over the territory included within the limits of said Sanitary District as originally organized. Before said Calumet Channel is connected with the present main sanitary channel, gates of suitable pattern for shutting off the flow of water into said Calumet Channel shall be installed at or near the connection of said Calumet Channel with the Calumet river and forever maintained for use in case of emergency, and for the protection of the property and lives of residents of the Illinois Valley, and shall maintain the same proportion of dilution of sewage through such auxiliary channels as it may construct and join to its main channel as is now required by the act creating said Sanitary District: *Provided, however,* that before any such channel is constructed across said Illinois and Michigan Canal, or the navigation of said canal in any manner interfered with, said Sanitary District of Chicago shall connect its present main channel from the controlling works at Lockport with the upper basin of the Illinois and Michigan Canal at Joliet by a channel of a depth of not less than ten (10) feet and a width of not less than one hundred and sixty (160) feet through its entire length, in which channel so to be constructed, said Sanitary District shall provide and construct a lock or locks of the size of at least twenty-two (22) feet in width by one hundred and thirty (130) feet in length between mitre sills, connecting upper and lower levels, and provide suitable protection for water craft in using said locks and channel. Said locks shall be constructed of the most approved pattern of their size, and be perfectly safe for use and be equipped with machinery to operate the same; and if only one lock is constructed it shall be provided with double gates to prevent accident,

and said Sanitary District shall forever maintain and operate the same. *Provided, further,* that said Sanitary District shall furnish and provide at said lock a site of the dimensions of at least twenty by thirty feet upon which the state through the canal commissioners shall have the right to erect a suitable office building and keep an agent therein, and the canal commissioners shall have such authority in and about said lock as is necessary to enforce the rules and regulations prescribed by them pertaining to and governing navigation on the Illinois and Michigan Canal: *Provided, further,* that said Sanitary District shall furnish, free of all expense, for the perpetual use of the canal commissioners, at some point in the Township of Lockport to be agreed upon by the canal commissioners and the Sanitary District trustees, a strip or parcel of land bordering upon said sanitary channel, eight hundred (800) feet in length and one hundred and thirty (130) feet in width, filling the same to a suitable depth to provide suitable roadways for approaches, whereon may be located, constructed and operated docks, shops, barns and other buildings controlled by the canal commissioners and used in connection with the operation of the Illinois and Michigan Canal.

369g. Navigation on Said Sanitary District.) Par. 3. Said Sanitary District shall permit all water craft navigating or purposing to navigate said Illinois and Michigan Canal to navigate the water of all said channels of said Sanitary District promptly, without delay and without payment of any tolls or lockage charges for so navigating in said channels. The rules of the United States government now in force, regulating navigation on the Chicago river shall govern navigation on the channels of said Sanitary District of Chicago: *Provided, however,* that the speed of all vessels while pass-

ing through the earth sections shall not exceed eight (8) miles per hour.

368h. Sanitary District—No Tax Upon Any Part of Added Territory.) Par. 4. Said Sanitary District of Chicago shall have no power to levy and collect any special assessment or special tax upon any part of said added territory to defray or pay any part of the cost, either of the work heretofere done by said Sanitary District or any main channel hereafter to be constructed in said added territory.

369i. Authority to Construct Dams, Etc.—Power.) Par. 5. That the said Sanitary District of Chicago is hereby authorized to construct all such dams, waterwheels and other works north of the upper basin of the Illinois and Michigan Canal as may be necessary or appropriate to develop and render available the power arising from the water passing through its main channel and any auxiliary channels now or hereafter constructed by said district.

369j. How Such Power May Be Utilized.) Par. 6. That the power made available by the works constructed under the provisions of this act shall be converted into electrical energy and shall be transmitted to the various cities, villages and towns within said Sanitary District or adjacent to the main channel of said Sanitary District and may be used in the lighting of said cities, villages and towns, or parts thereof, or for the operation of pumping plants or machinery used for municipal purposes or for public service, or may be disposed of to any other person or corporation, upon such terms and conditions as may be agreed to by the said Sanitary District; *Provided, however,* that it shall be the duty of said Sanitary District to utilize so much of said power as may be required for that purpose to operate the pumping sta-

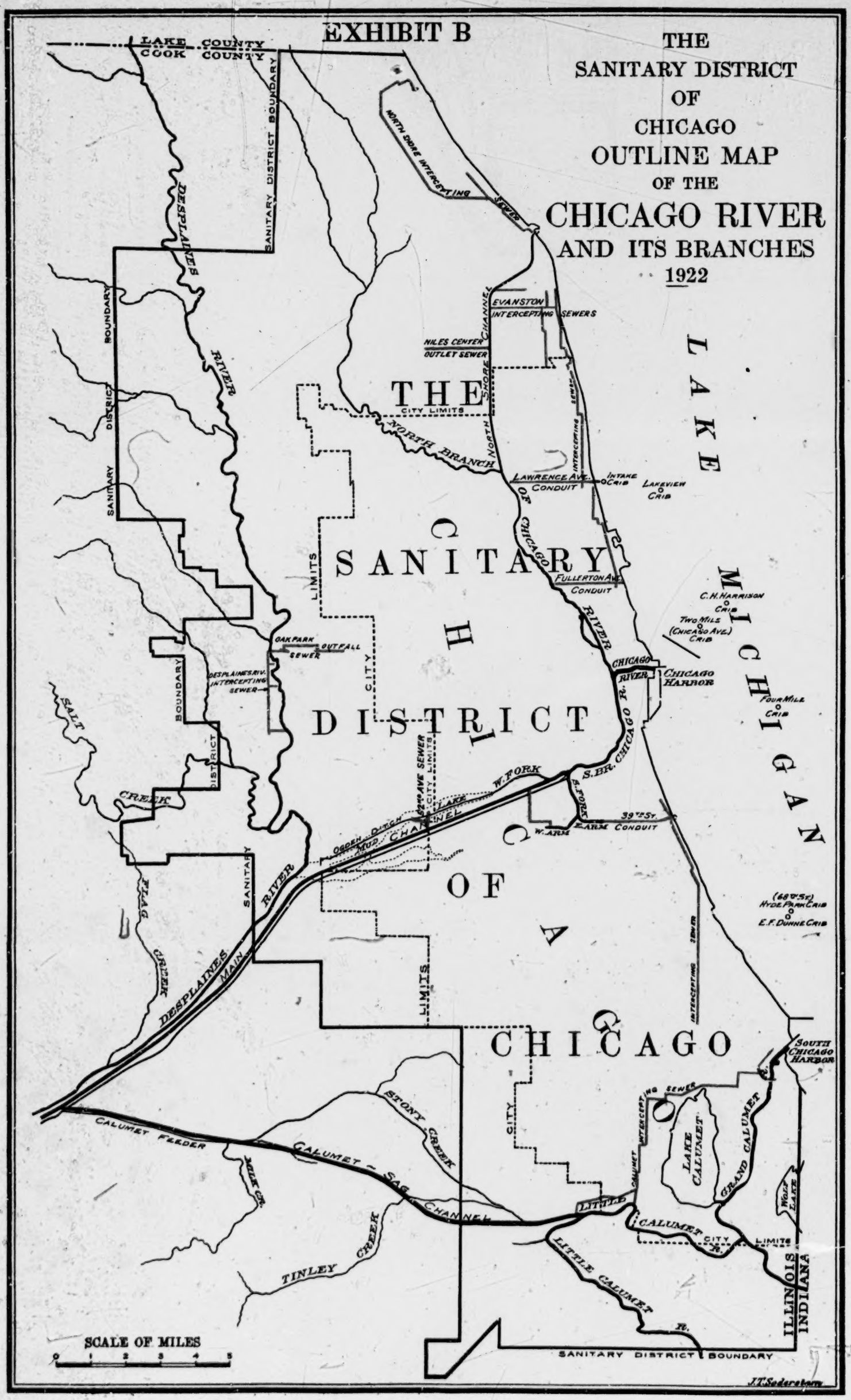
tions, bridges and other machinery of said Sanitary District.

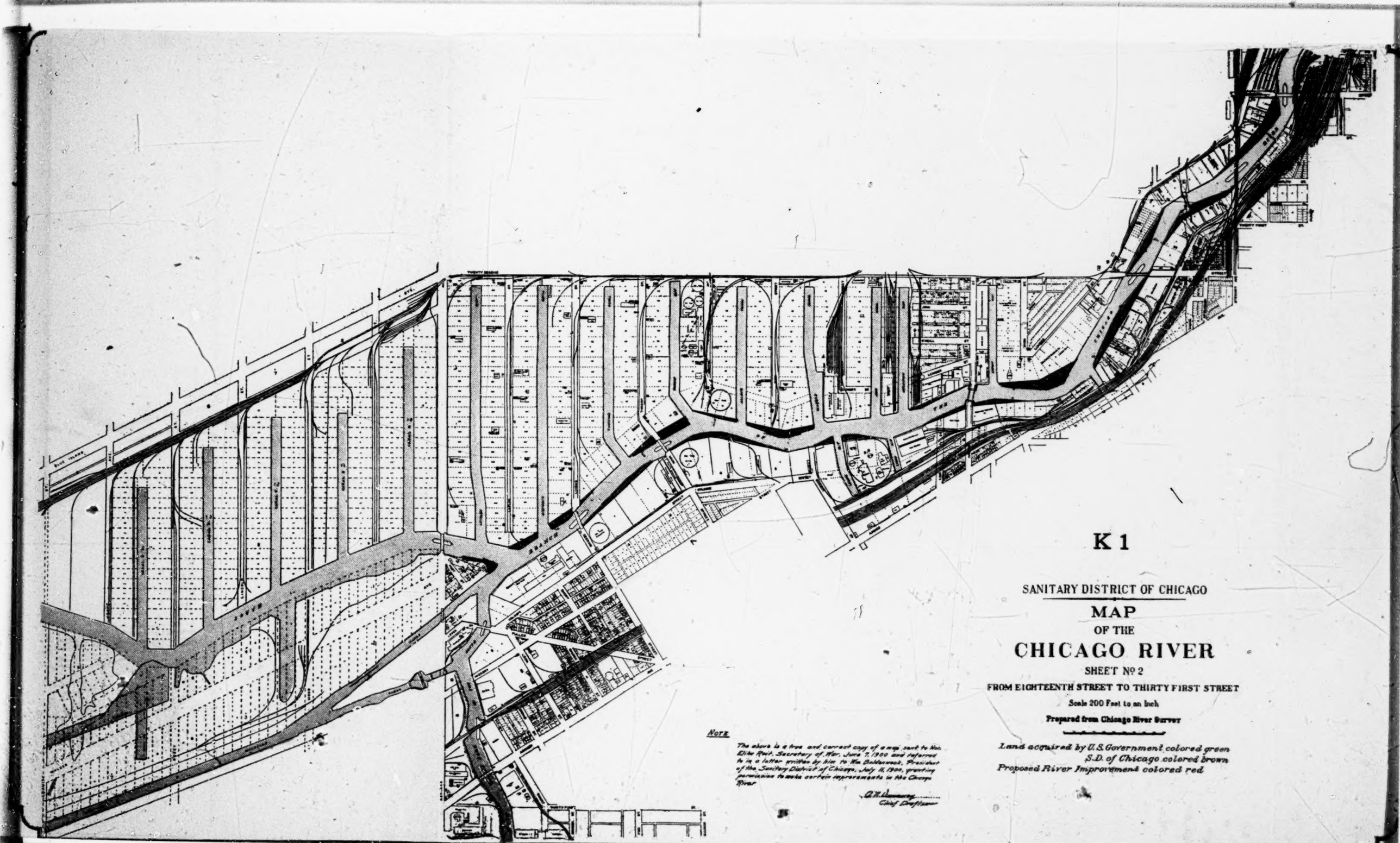
369k. Authority to Levy Taxes.) Par. 7. That for the purpose of meeting the expenditures arising from the exercise of the powers conferred by sections five and six of this act upon the said Sanitary District, the said Sanitary District of Chicago is hereby authorized to levy and collect in each year, for a period of three years (in addition to the taxes which said district is now by law authorized to levy and collect) a tax of not exceeding one-fourth of one per cent of the value of the taxable property within the corporate limits of said district, as the same shall be assessed and equalized for the state and county taxes of the year in which the levy is made; *Provided, further,* that the county clerk, in extending said one-fourth of one per cent tax upon the taxable property within said Sanitary District, shall not in any event reduce the same, but in that respect said one-fourth of one per cent shall not be subject to the provisions of and act entitled, "An Act concerning the levy and extension of taxes," approved May 9, 1901.

369l. Comply with Acts of Congress as to Illinois and Michigan Canal.) Par. 8. The said Sanitary District shall, at the expense of said district, in all respects comply with the provisions of the Acts of Congress of March 22, 1822, and March 2, 1827, as construed by the courts of last resort of the State of Illinois and of the United States, in relation to the Illinois and Michigan canal, so far as it affects that portion of the Illinois and Michigan canal vacated or abandoned by the terms of this act.

369m. Petition for Question to be Submitted—Election.) Par. 9. If within sixty (60) days after the passage of this act a petition signed by not less than

three per cent of the legal voters of the territory within the limits of The Sanitary District of Chicago, as the same are enlarged by the terms of this act, praying that the question of the adoption of this act shall be submitted to a vote of the electors of the territory within the said limits of the said Sanitary District of Chicago shall be filed with the clerk of said Sanitary District, then and in such case the question of the adoption of this act shall be submitted to a vote of the said electors as in said petition prayed, at the general election to be held in the County of Cook in November, 1904, and in such case this act shall not be in force unless a majority of the votes cast at said election upon the question of the adoption of this act shall be in favor of the adoption thereof. It shall be the duty of the election officers having charge of the preparation of the ballots and the giving of the notices of election and of the counting, canvassing and making return of the ballots to take all necessary steps and do all necessary acts to cause the said question of the adoption of this act to be submitted to a vote as hereinbefore provided, and to cause the result of such election to be canvassed and certified, as provided by law in other similar cases.


EXHIBIT B
THE SANITARY DISTRICT OF CHICAGO
OUTLINE MAP OF THE
CHICAGO RIVER AND ITS BRANCHES
1922
LAKE COUNTY
COOK COUNTY
SANITARY DISTRICT BOUNDARY
DES PLAINES RIVER
NORTH SHORE INTERCEPTING SEWER
EVANSTON INTERCEPTING SEWERS
NILES CENTER OUTLET SEWER
NORTH SHORE CHANNEL
NORTH BRANCH OF CHICAGO RIVER
LAWRENCE AVE. CONDUIT
INTAKE CRIB
LAKEVIEW CRIB
FULLERTON AVE. CONDUIT
C.H. HARRISON CRIB
TWO MILLS (CHICAGO AVE.) CRIB
FOUR MILL CRIB
(68TH ST.) HYDE PARK CRIB
E.F. DUNNE CRIB
CHICAGO RIVER
CHICAGO HARBOR
SOUTH CHICAGO HARBOR
LAKE MICHIGAN
THE SANITARY DISTRICT OF CHICAGO
CITY LIMITS
OAK PARK OUTFALL SEWER
DES PLAINES RIV. INTERCEPTING SEWER
SALT CREEK
W. FORK S. BR. CHICAGO R.
S. FORK
W. ARM
E. ARM CONDUIT
39TH ST.
22ND AVE SEWER
OGDEN DITCH
MUD LAKE
CHANNEL
DES PLAINES MAIN RIVER
FLAG CREEK
INTERCEPTING SEWER
CALUMET FEEDER
STONY CREEK
CALUMET - SAG CHANNEL
MILL CR.
TINLEY CREEK
LITTLE CALUMET R.
CALUMET INTERCEPTING SEWER
LAKE CALUMET
GRAND CALUMET
WOLF LAKE
CALUMET CITY LIMITS
ILLINOIS
INDIANA
SCALE OF MILES
0 1 2 3 4 5
SANITARY DISTRICT BOUNDARY
J.T. Soderstrom



K 1

SANITARY DISTRICT OF CHICAGO

MAP
OF THE
CHICAGO RIVER
SHEET № 2

FROM EIGHTEENTH STREET TO THIRTY FIRST STREET

Scale 200 Feet to an Inch

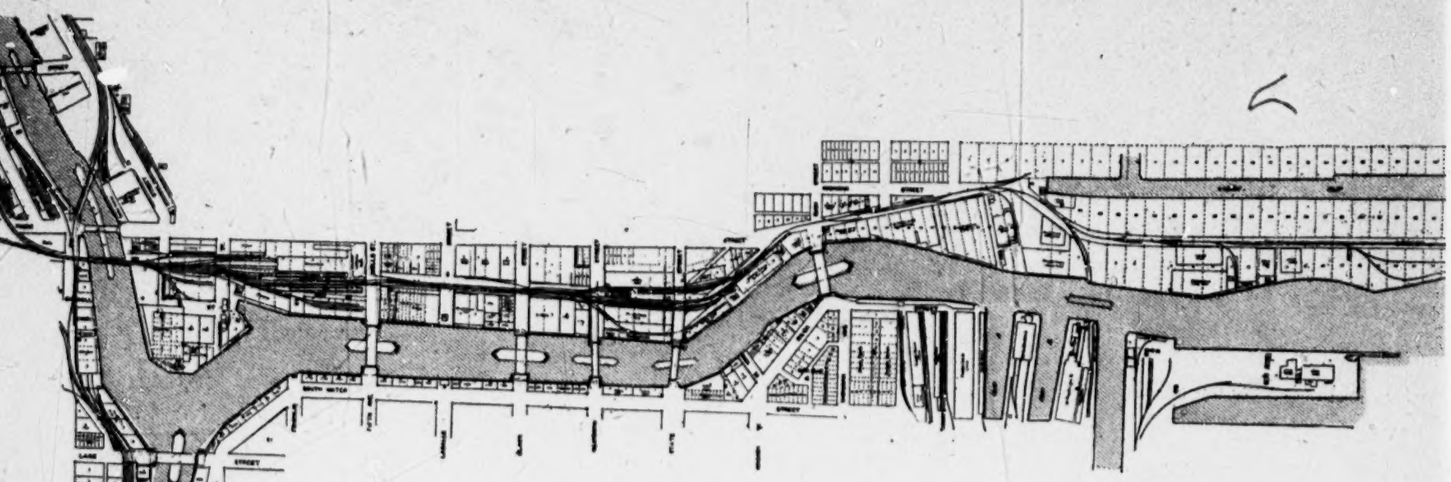
Prepared from Chicago River Survey

Land acquired by U. S. Government colored green
S.D. of Chicago colored brown
Proposed River Improvement colored red

NOTE

The above is a true and correct copy of a map sent to Hon. Elihu Root, Secretary of War, June 7, 1900 and referred to in a letter written by him to Mr. Bothwell, President of the Sanitary District of Chicago, July 11, 1900, granting permission to make certain improvements in the Chicago River

C. M. Sweeney
Chief Draftsman



K 2

SANITARY DISTRICT OF CHICAGO

MAP
OF THE
CHICAGO RIVER

SHEET Nº 3

FROM KINZIE STREET TO EIGHTEENTH STREET

Scale 200 Feet to an inch

Prepared from Chicago River Survey

Land acquired by U.S. Government colored green
Proposed River Improvement colored red

NOTE.

The above is a true and correct copy of a map sent to Hon. Elihu Root, Secretary of War, June 7, 1906 and referred to in a letter written by him to Mr. Bakewell, President of the Sanitary District of Chicago, July 11, 1906, granting permission to make certain improvements in the Chicago River.

J. M. Dunaway
Chief Draftsman.

